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ORIGINAL ARTICLES.

ANGINA PECTORIS.

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PART I.

In the true sense of the word angina pectoris is not a disease but a syndrome associated with organic and functional disturbances of the heart and aorta and dependent upon a complex variety of causes and morbid conditions which are neither constant nor always positive.

Walshe* divided the affection into true and false angina, the former including those varieties which arise in connection with organic diseases of the coronary arteries and aorta; the latter, those dependent upon neuroses, vaso-motor, reflex and hysterical disturbances. The dividing line between these various forms is not always closely drawn, neither has the classification been universally recognized.

Ætiology—True Angina.—With rare exception the affection is associated with arterio sclerosis of the coronary arteries. The various factors which lead to this process must therefore be considered as essential and component parts of its etiology.

Predisposing influences are found in heredity, age, sex, occupation and station in life. Heredity plays no small part. The tendency in certain families to degenerative changes in the arterial system is well recognized, and in the instance of this affection is not infrequently observed. The case of the Arnold family has often been cited as a notable example. Matthew Arnold, his father, Thomas of Rugby, and his grandfather all died of angina pectoris.

In regard to age, comparatively few cases occur under forty, the majority being over fifty. Exceptions are observed in aortic diseases, aortitis and aneurysm. Cases, however, are sometimes seen among the young, one of twelve years of age being on record. Males are more liable to the affection than females. It is evident that the influence of age and sex arises from the fact that arterio-sclerosis is for the most part confined to middle life, and that males are more exposed to the causal agencies.

Laborious occupation requiring long continued physical exertion is considered as conducive to angina pectoris, owing to its tendency to give rise to arterio-sclerosis from increased blood pressure. While this is true in some instances it cannot be said that the affection is more frequent among the laboring classes, if one may judge from hospital patients. On the contrary, it is more often observed among the rich and well-to-do, and in men of intellectual pursuits. Prolonged, severe mental strain may exert a powerful influence on, if not actually give rise to angina pectoris, by causing increased arterial tension. Probably for this reason, in part at least, the affection is more frequent among brain workers.

Foremost among diseases which underlie true angina pectoris is gout. There can be no question but that this is one of the most important factors in its ætiology. Diabetes is not an infrequent cause, and a certain proportion of cases have been found associated with it. Valvular disease of the heart is not commonly attended with true angina pectoris. Præcordial pains are frequent, but they are not true angina. Aortic disease, especially insufficiency, is the form of valvular lesion which is most likely to be associated with the affection. In mitral disease it is very rare.

Chronic interstitial myocarditis probably more than any other disease is the most constant source of angina. The sclerotic degeneration which typifies its presence may be either general or partial, or may affect the coronary arteries in particular. But, like other affections associated with angina, chronic myocarditis is of frequent occurrence without any manifestation of anginal symptoms.

In some cases sclerotic degeneration is situated outside the coronary arteries, yet in such close proximity to their mouths that later they become affected by contiguity. Thus, aortitis, acute and chronic, dilated and sacculated aneurysm of the aorta act as casual factors.

Adherent pericardium is sometimes a cause when associated with disease of the aortic valves. Aneurysm of the aorta, either sacculated or fusiform, may also give rise to paroxysms of true angina.

Syphilis in the tertiary stage is an ætiological element of importance. When syphilis attacks the heart it is prone to locate in the aorta and walls of the coronary arteries and induce arterio-sclerosis and thus indirectly cause angina pectoris.

Acute infections and fevers may be attended with angina pectoris, especially in the instance of influenza, where it has been known to follow as a serious sequela. Most of the cases of this type, however, may be more properly classified with the pseudo variety.

The exciting causes are of great importance. They are, muscular exertion, mental emotion, and digestive disturbance. These factors act sometimes in a mechanical way. A dilated stomach or intestines distended with gas may press upon the heart and induce an attack. A certain position unconsciously assumed may have the same effect. Physical exertion, especially after a meal, mental emotion, whether grief or joy, anger or any form of excitement may likewise form decided exciting causes.

Pseudo-Angina.—This depends upon direct, reflex, neurotic or toxic influences. It is decidedly more frequent in women than men, and those affected are younger than in the true angina.

Direct causes are those which act upon the cardiac nerves by pressure. They are aneurysm, enlarged glands, affections of the brain and spinal cord which implicate the origin of the nerves supplying the heart and neoplasms of the neck and chest.

Reflex causes are those which arise from morbid conditions in other organs. Gaseous dilatation of the stomach or colon may press upon the heart and in nervous persons so interfere with its action that extreme pain may arise attended with dyspnea and even collapse and syncope. Disease of the liver has been known to cause similar conditions, likewise uterine and ovarian disease. Some observers have thought that the

* A Practical Treatise on the Heart and Great Vessels. Walter Hayle Walshe M.D. 4th Ed. London, 1873.

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origin of anginal attacks was in the abdominal viscera.

Peripheral irritation may also be a cause. Cases are on record which have arisen from severe cervico-brachial neuralgia of traumatic or spontaneous origin.

Neurotic influences, while including to a certain extent those of a reflex nature, embrace in addition the effects of emotion on neurotic and hysterical persons, the consequences of parturition, lactation, abortion, anæmia, or a lowered state of the system from any cause.

Toxic agents include tobacco, coffee, and tea. Tobacco angina is the most frequent of the toxic anginas, although in itself it is not of common occurrence. It was first pointed out by Huchard. The heart is very susceptible to the action of nicotine, as is well known, and in the case of angina it produces a condition of neurosis or spasm. Huchard divides tobacco angina into three forms: First, that due to a functional spasm of the coronary arteries, produced by direct action of the drug on the vasomotor mechanism of the heart: Second, that due to an arterial spasm caused by tobacco dyspepsia: Third, that due to arterio-sclerosis with narrowing of the lumen of the vessels produced by chronic tobacco poisoning. Thus it will be seen that tobacco may be productive of both true as well as pseudo angina.

Important exciting causes of pseudo angina are mental emotion, physical exertion, and disturbances of the alimentary tract, chilling of the surface, cold immersion, etc.

Of the causes which are productive of pseudo angina pectoris, those of reflex origin are the most frequently encountered.

Morbid Anatomy.—In all the anatomical changes the main features are embarrassment of the coronary circulation and consequent diminution of nutrition. Yet there are no pathological changes which are invariably attended by symptoms of angina pectoris vera.

It has been stated that atheroma of the coronary arteries is the chief cause, hence it follows that the pathology of coronary arterio-sclerosis and that of the causal diseases which underlie it belongs essentially to angina pectoris. On the other hand, arterio-sclerosis of the coronaries is by no means always attended by angina, for numerous cases have been found which were entirely free from all symptoms of such a nature. It is this negative side of the pathological processes associated with true angina which lends obscurity to the question. Jenner, the discoverer of vaccination, first pointed out that occlusion of the coronary arteries was a probable cause of angina pectoris. This theory is now warmly advocated. Numerous autopsies of those who have died of angina show partial or complete occlusion of the coronary arteries, or of its branches from narrowing due to the presence of calcareous disc or from thrombi or emboli.

In a large number of fatal cases, which have been examined after death, fatty degeneration has been found with disease of the coronary arteries. Frequently the arteries are in advanced states of calcification and the fatty changes excessive. On the other hand, the change may be very slight, appearing as yellow striæ in the wall of the ventricles and papillary muscles. Microscopical examination, however, will reveal the presence of fat globules.

The association of chronic interstitial myocarditis as an ætiological factor in angina points to the fact that the pathological processes which occur with this condition must also be regarded as elements in the pathology of angina pectoris.

While recognizing the close connection between diseases of the coronary arteries and myocardium and true angina, the important, and very apparent fact, must not be lost sight of that only a comparatively few are attended with angina, that these affections are common and angina is not. No sufficient reason has been discovered for this variability.

The seat of the pain is doubtless in the heart but the condition of that organ during the paroxysm and the cause of the pain are more or less subjects of speculation.

Heberden maintained that the heart was in a condition of spasm. Spasmodic contraction of hollow and tubular organs, as in the instance of the bile duct, ureters, intestines and uterus in parturition, furnish striking analogies to bear out the idea, which has found many adherents. On the other hand, it is urged that the true condition of the heart is exactly the opposite, namely, that of paralysis, that this arises from disturbance of the heart rhythm from contraction of the areas surrounding anæmic infarcts, while the affected areas themselves remain incapable of contraction. In cases characterized by a repetition of paroxysms during a brief interval of time, it is not to be supposed that there is a repetition of the infarctions but that the presence of an infarct in the excited state of the heart causes a diminution of the blood supply. It is apparent how such a condition causes weakness of the heart and syncope.

Distention and stretching of the heart walls is, according to Traube, accountable for the pains. This observer held that the nerve filaments on the surface of the heart are thrown into a state of tension. The blood vessels which are able to sustain the heart when acting quietly, are unable to meet additional demands for more blood when the organ's increased action calls for it. The result is that certain muscular fibres fall into temporary disuse. The consequence is that the increased intracardiac pressure stretches the weakened muscles and at the same time the nerve fibres, hence the pain. The subsidence of anginal attacks in the presence of dilatation, to which attention has been called by Musser, goes to bear out the theory. Musser further states that probably it is on account of dilatation that angina does not occur with mitral insufficiency and that its infrequency amongst the young and in females is owing to the greater elasticity of the heart walls permitting dilatation.*

Again, it has been contended that the cause of the pain lies in the vessels themselves and is due to angeiospasm or thrombus of the coronary arteries. This theory was set forth in the early part of the last century by Allan Brown.† It is a recognized fact that ischæmia may give rise to the most violent pains, as in the instance of gangrene from embolism and in the treatment of aneurysm by compression, especially at the time of occlusion. It is argued that the occlusion of the coronary vessels induces angeiospasm and that the attacks of pain may be repeatedly occasioned from the presence of a single point of obstruction.

The theory that neuritis is the cause of the pain has many supporters. This view in various forms, also dates from the early part of the last century. Laennec held that either the pneumogastric or sympathetic division of the cardiac nerves was probably involved together with the brachial plexus. Against this theory is the fact that aneurysm, mediastinal neoplasms, adherent pericardium and exudative pericarditis may seri-

* Angina Pectoris in its Relation to Dilatation of the Heart. H. Musser, M.D., *American Journal Medical Sciences*, 1897, Vol. CXIV.

† Quoted by Osler, Angina Pectoris and Allied Affections. New York, 1897.

ously implicate the cardiac nerves without causing pain.

The state of the arterial system and the blood pressure have been the subject of considerable discussion. Some observers hold the opinion that there is a condition of angeiospasm and that the blood pressure is increased. It should be remembered that the exciting causes are such that tend to raise the pressure of the blood. Notwithstanding this certain cases show a contrary condition. According to Lauder Brunton the pressure is high. Broadbent regards it as variable.

Functional or Pseudo angina has no morbid anatomy.

—*Symptoms.—True Angina Pectoris.*—In typical cases the symptoms are decidedly characteristic. Without warning, the patient is seized with pain of great intensity in the præcordial or sternal region. This pain radiates down the left arm, sometimes the right, as well as across the shoulders and up the back of the neck to the top of the head. In rare instances it may involve the whole chest or may radiate to the epigastric region, abdomen and even the testicles. Sometimes it does not radiate but is confined exclusively to the arms. The pain is described as of constrictive nature, as if the heart were grasped in a vice or as if it were being crushed against the spinal column; there is a sense of suffocation and inability to move. A characteristic feature is the terrible mental anguish, *angor animi,* the sense or apprehension of impending death.

When the attacks come on the patient suddenly stops whatever he is doing. If walking or standing he will seize the nearest object for support and remain motionless. More frequently the attacks make their appearance in the daytime rather than in the night. They are seldom periodic.

During the attack the patient seeks the posture which affords the most relief. Sometimes this is sitting, sometimes standing, sometimes sitting and bending over toward the affected side with the hand pressed against the chest walls. The countenance is pale, pinched and staring (facies Hippocratica), forehead or entire surface cold or bathed in perspiration. As a general rule he is speechless or says but little. Sometimes there is vomiting.

Vaso-motor disturbances generally attend the paroxysms of true angina. The arms and hands may become cold, pale and bloodless (local syncope) and covered with perspiration, often a sensation of tingling or of swelling. Cases have been reported in which the pallor has been followed by cyanotic patches in the arms and hands.

The duration of the attacks is from a few seconds to several hours, the average being from five to ten minutes. Recovery is not infrequently attended with eructation of gas and the voidance of large quantities of pale urine of low specific gravity.

The paroxysms may be repeated or the first one may result in death. The patient is always in great peril. More commonly there are recurrent attacks during a period covering several months or even years, in which the termination is almost always sudden death.

After the attack the patient may appear in his former health or he may suffer from cardiac asthma, a tendency to, or actual recurrence of the anginal attacks and general enfeeblement of the heart action.

True angina will present decided variations in intensity. In some instances the paroxysms are comparatively mild. There are also variations in the type of which the following are the principal examples:

Angina sine dolor is that form in which the prominent symptom of true angina, the constrictive oppression, the angor animi and vaso-motor disturbances are present but the pain is absent. In this connection it is well to recall again the observation of Musser in regard to the relation of dilatation to angina, namely, that as dilatation develops in persons who are subject to angina, the pains grow less and cease. In such instances the change results in the condition known as angina sine dolor and is likely to be followed by sudden death.

Another type of cases is that where the patient suddenly preses his hand to his side, makes some exclamation referring to the terrible pain in the heart and suddenly expires.

Osler speaks of two anomalous varieties which he calls syncope anginosa and Adams-Stokes syndrome. The former consists of paroxysmal attacks which resemble angina sine dolor, in that faintness is the predominating symptom. The patient does not, however, entirely lose consciousness. In this connection Broadbent is quoted as follows: "A patient who has ceased to suffer with attacks of angina may have attacks of what he calls faintness, in one of which he ultimately dies.*

The Stokes-Adams syndrome is described as follows: "Permanent slowness of the heart action, vertigo and syncope are the two distinguishing features. The cerebral symptoms are naturally those to which chief attention has been drawn. Vertigo is the most common and is usually transient and repeated. Actual syncope of three or four minutes' duration, resembling closely syncope angiosa, and doubtless of the same nature, has been the special feature of some cases, while in others the attack has been apoplectiform in character. Huchard regards the slow pulse as the result of change of the vagi centres due to disease of the arteries of the medulla. The temporary circulatory disturbance of the brain accounts for the syncope and apoplectiform attacks, conditions not rare among aged persons with arterio-sclerosis."†

Still another type of angina is that sometimes observed in aged people with arterio-sclerosis. This is characterized by pain of more or less intensity in both arms and across the shoulders with some præcordial distress and great general prostration. The mental symptoms and attitude characteristic of true angina are lacking. The pulse is irregular and feeble. Attacks of this nature have been observed by the writer as an accompaniment of the general break up of old age and have proved to be a precursor of dissolution.

Pseudo or Functional Angina Pectoris.—In this variety the manifestation occurs in several forms and in different degrees of intensity and gravity. The term pseudo was introduced by Walshe as covering those forms of angina occurring independently of any recognizable lesion, but with our still limited knowledge of the subject it is not altogether appropriate.

Anginal paroxysms of this type, are not, as a rule, traceable to exciting causes but occur spontaneously. The pain is less severe and more diffused over the precordial region. It is sometimes described as a sensation of distention. The patient is restless and emotional.

There are four principal forms of pseudo angina, namely, the reflex, hysterical or neurasthensic, vasomotor and toxic.

Reflex angina pectoris was first observed by Langlois. It is associated with visceral or peripheral disturbances. The most marked cases have been those in which

*Diseases of the Heart Considered from the Standpoint of Diagnosis. W. H. Broadbent, M.D., *British Medical Journal,* 1891, p. 747.

†Angina Pectoris and Allied States. Wm. Osler, N. Y., 1897.

there were decided indications of gastro-intestinal irritation from indigestion. The attacks may be painful or syncope may be the more pronounced symptom. Severe peripheral neuralgias have been known to act as exciting causes.

Hysterical angina pectoris is of a protean type. In conjunction with the anginal paroxysms some of the characteristics of hysteria are present. There may be severe radiating pain in the præcordial region and vaso-motor disturbances. There may also be hyperæsthetic spots and pains in other spots which alternate with that in the præcordium, also decided evidence of neurotic disturbances elsewhere.

Vaso-motor angina was described by Nothnägel. It is an unusual form. It is characterized by sudden coldness and pallor of the extremities which is frequently attended with profuse perspiration, severe præcordial pain and distress, with palpitation and faintness. It will be observed that these symptoms occur in cases associated with structural lesion of the heart, but they arise also apart from any recognized lesion. In the latter instances they have been designated as vaso-motor angina pectoris. Nothnägel attributed vaso motor angina to construction of the arterial system, which acted directly upon the heart. A distinguishing feature of the form is the fact that it is excited by the application of cold to the surface, even washing the hands in cold water. It is characterized also by its proneness to appear in persons of a neurotic and hysterical temperament.

Toxic angina pectoris is limited to that produced by tobacco. It is designated by some writers as a form of true angina, but that is only the case when tobacco poisoning has induced arterio-sclerosis. Huchard, who has written very fully on this subject, mentions a *sclero-tabacique* and a *spasmo-tabicque*. Both of which are rare. The functional (spasmo-tabacique) which is the most common of the two, is due to spasmodic contraction of the coronary arteries. Balfour* denies that tobacco angina arises from the special action of the poison, but considers it the result of ischæmia from the lowered vitality and impoverishment of the blood from the influence of tobacco. When one takes into consideration the susceptibility of the heart to nicotine, the direct effect of the poison seems the most plausible theory for explaining the cause of the disturbance.

The principal symptoms of tobacco angina, according to Huchard, are vertigo, tendency to syncope, pallor, contracted pulse, coldness of extremities and perspiration with præcordial distress which may or may not be attended with pains. These, it will be observed, are symptoms of the vaso motor variety. Other symptoms pointing to tobacco poisoning, either in association with the paroxysm or independent of them, will appear, namely: gastric disturbances, oppression, dyspnœa, general prostration, mental confusion, disorders of vision, ringing in the ears and spinal hyperæsthesia.

Those who are subjects to angina of tobacco will almost always manifest during the course of the paroxysm, or apart from it, marked disturbances of the heart action. Feebleness of the pulse, slowness, and acceleration and intermittency, palpitation, tendency to syncope and marked irregularity of the heart (delirium cordis).

The paroxysms are frequently very severe and complete in their manifestations. But it is in this form of angina that the incomplete or abortive types are observed. These consist of dyspnœa with slight præcordial distress with the sensation of cessation of the heart and apprehension of death. Tobacco angina is further characterized by the spontaneity of the paroxysms, at the same time they may be induced by any motion or effort.†

Physical Signs.—There are no distinctive physical signs attending angina, neither is there necessarily any in the heart sounds.

TREATMENT OF TYPHOID FEVER BY THE BRAND BATH WITH AN EXAMPLE.

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IN view of the importance of the subject of typhoid fever we would do well to consider it again, especially with reference to the employment of the Brand bath in its treatment.

Case: J. L., a woman, 23 years old, admitted to the Colored Hospital ten days ago, a native of Finland, gives the following history: At the age of 7 years she had smallpox, the scars of which can still be seen on her face, but since that time she has been in good health. Five weeks before admission she was taken sick with pain in the head and extremities, and had chills and fever on alternate days, the chills lasting for about half an hour, being followed by fever, and this in turn by profuse perspiration. She consulted a doctor, who diagnosed the case as malaria. Her bowels were normal, no vomiting, but she had no appetite. At the end of a week, however, the diagnosis of typhoid fever was made, and she was sent to the Fordham Hospital. She remained there for four weeks, during which time she received the bath treatment, but she does not remember very distinctly what happened while she was there. At the end of four weeks she was transferred to this hospital, and on admission she presented the appearance of a patient who was convalescing from typhoid fever. On admission her temperature was 100°, pulse 130, and respiration 28, so although she had very little fever her general condition was poor. During the week following her admission there was a gradual rise of temperature, it being higher each succeeding day. This is typical, of course, in this disease, and there was no difficulty in making a diagnosis of a relapse. We judge from the fact that she was transferred from the Fordham Hospital as a convalescent that her temperature had been normal for a time, so that in this case we have an example of a real relapse.

There are two important kinds of relapses in typhoid fever—those in which the temperature comes down to normal and stays there for a time, and then, going up again, as was the case with this patient; and those which are called intercurrent relapses, in which the temperature shows a downward inclination, but instead of reaching normal, rises again, and then, perhaps, comes down.

This patient's temperature has been as high as 105, and her pulse frequently 160; her respirations have been rather slower than on admission. As soon as her temperature reached the limit which we set for reduction, 102½°, the tub bathing was commenced, because relapses in typhoid fever must be treated exactly the same as the disease proper. I have seen a patient go through as many as four of these relapses, and, being treated each time by bathing, finally make a good recovery. This is the eleventh day of the relapse, and you notice that the temperature has become less persistent, which is shown by the reduction after the bath and the fact that the temperature does not go up so high again. The

*Clinical Lectures on Diseases of the Heart and Aorta. G. W. Balfour, M.D., London, 1876.

†Traité Clinique des Maladies du Cœur et des Vesseaux. Henri Huchard. Paris, 1893.

bathing at first employed was sponge bathing, but now she is getting the tub baths.

The treatment of typhoid fever by tub bathing has now been in general use for about the past twelve years in this country, and for about fifteen years in Germany. Before that, typhoid fever was also treated by the application of cold in the form of water—sponge bathing and various other forms of hydrotherapeutics, such as sprinkling the patient with ice water, but the Brand bathing system—cold tub bathing, has proved itself by experiment in the German army, Australia, and everywhere, so very effective that it has gradually superseded all other methods as the ideal method of treating typhoid fever. I say the ideal method because there are circumstances in private practice and even in hospital work under which we have to get along without the tub bathing, but the tub bath is so much superior to any other method that I would consider myself very much at fault if I allowed a case of typhoid fever to get very severe without resort to the tub bathing. The method is so very good that it is worth while to carry it out at the expense of a great deal of inconvenience.

Statistics of morality are not only very hard to collect, but they are difficult to interpret after they are collected. The mortality of typhoid fever under favorable circumstances has been reduced as low as 4 per cent., but our experience in New York, and the experience of men throughout the country, shows that the mortality is a good deal higher than this. A mortality of 10 to 12 per cent. is perhaps nearer the truth. Very fine statistics have been collected from army hospitals in times of peace, where the troops are under constant observation, and where they would rather be sick than otherwise, and where they do not lose any time at all in reporting sick. In this way the care of cases in the army is gotten very early, the diagnosis made promptly and the patient put under treatment. In our hospital work, however, it is very different. We get patients who have been neglecting themselves or who have been neglected, we get patients who have previously been sick without care, and they come to us in the second and third week of the disease. They have been walking around and have used up much of their reserve strength after a week or two weeks of illness, all of which goes against them, and, in spite of all our efforts, they get into a state of collapse, and some of them die. So, with our class of cases, unless we discover some very much better treatment than we have, we must expect a mortality of about 8 per cent. to 12 per cent.

The complications of perforation of the bowel and hemorrhage are often of necessity fatal, but what we dislike very much to see, and what we avoid by the Brand baths, is death from the severity of the disease; death from this cause now is extremely rare, in cases treated from the first by bathing, as the cold bath sustains the nervous system and keeps up the vitality of the patient. We must seek to support the system so that the patient can go through the disease without becoming exhausted.

Since typhoid fever has been treated with water to reduce the fever almost ever since the human race began—no one can remember when cold water was first applied to a fever patient—you will no doubt wonder why sprinkling with ice water, which was the treatment a good many years ago, was not only a failure, but actually killed a good many of the patients. Men who witnessed the experiments state that the patients were put on a rubber sheet and sprinkled with ice water out of a watering pot, but the results were very bad. Now, how does such a procedure differ from the tub baths, and why is the tub bathing so much better than the simple sponging, and again, why is tub bathing so much better than the application of water in rubber coils or packing the patient in ice or in cold sheets?

The whole reason is this—that the tub bathing is accompanied by rubbing. The rubbing is the most important element in tub bathing, so that I have often thought it might better be called tub rubbing, so that the importance of the rubbing might not be lost sight of. It is this rubbing while the patient is in the tub that makes all the difference between a procedure that does harm and a procedure that does a great deal of good.

The temperature of the water is a matter in which a good deal of judgment can be used. The standard bath is at a temperature of 65° for fifteen minutes. We are accustomed here in cases of moderate severity to start with a warm bath at 80° or 90°, and then give each bath a little colder, so that the patient gradually becomes accustomed to it and does not object so much. Some authorities prefer 70°, but the bath should never be colder than 65°. The length of the bath can also be varied according to the necessity of the case. When I was house physician in the hospital the temperature of one of the typhoid fever patients suddenly went up to 108°. I was out at the time, but my assistant, who was a man of a good deal of sense and judgment, put the patient into a bath at 65°, and simply kept him there until his temperature was reduced, and the man made a good recovery from typhoid fever. Without the cold bath treatment, I think the man would certainly have lost his life, so that in a case of extraordinary high temperature we are perfectly justified in prolonging the bath to accomplish the object for which it is given.

This woman's temperature is now 103⅗°, and she should therefore have a bath. I will let you go ahead and give it, and we will discuss the matter as we go along.

On examination of the patient, we notice that with this relapse there has been a return of the eruption, and although there are only two rose-colored spots on the abdomen, they are just as typical of typhoid fever as a more profuse eruption, and if the blood from one of these spots were to be examined, the germs of typhoid fever would be found. I would not deem it safe to make a diagnosis of typhoid fever simply from an eruption, because sick people are very apt to have rose-colored spots, but the blood test gives us a verification of the diagnosis.

The patient is prepared for the bath by giving her half an ounce of whiskey, cotton is put in her ears, her night dress is removed and she is covered with a sheet. The tub contains water enough to cover the patient well, the temperature of the water is tested and found to be 65°, the tub is placed alongside the bed and the patient lifted into it by the shoulders and feet. You notice as this patient is lifted in she does not seem to mind it at all, as she has become accustomed to it through having had so many baths. The nurses carry on the rubbing vigorously, but they do not press very hard, so it does not give the patient any pain. The rubbing is carried on all over the body, except the abdomen, which is avoided.

The advantages of this cold bathing are very numerous, the least of all being the simple reduction of temperature—that is, of course, important, but the stimulating effect on the nervous system is perhaps the most important result of the treatment. The stimulating effect on the respiratory organs is also very marked. You cannot imagine a patient plunged into a tub of cold water like this and rubbed as she is being rubbed without taking deep breaths. This deep breathing keeps the lungs well supplied with air, and is no doubt a great

factor in preventing bronchitis and pneumonia. It is true, we do have pneumonia as a complication of typhoid fever in these tub cases, but it is less frequent than it was under the old form of treatment. The only contraindications for these baths are the onset of peritonitis, hemorrhage and pneumonia.

I have a very definite practical knowledge of these baths, because they were introduced when I was a junior in the hospital. It was then considered a very violent and radical form of treatment, and there was a great deal of opposition on the part of the hospital authorities. They thought it would be criticized by the press and every one else, so they made a hard and fast rule that no tub baths should be given except in the presence of a doctor, and the doctors had to help give the baths. In the first months of my hospital practice we had a large number of typhoid patients, sixty in all, so I got up each night every three hours, went into the wards, and stood over the patients while these baths were given them. In the male wards the doctor helped the orderly to do the rubbing, and I used to think the water was pretty cold about 4 o'clock in the morning. When I began to do the work I thought it a very cruel procedure, but the results were so magnificent and the patients did so well that I became thoroughly converted to it, and I am very glad I had the experience, because I now have perfect faith in the treatment. The treatment is now so generally accepted that there is no prejudice against it, and it is entrusted to the nurses.

It does not take much imagination to conceive of the stimulating effect that such a bath has, and when you compare the so-called typhoid state in which the patient lies abed greatly emaciated, with a low, muttering delirium, tongue dry, lips and tongue cracked, and the patient half the time in a state of coma, with the splendid condition of this patient even now, when she is eleven days along in her second course of typhoid fever, you can easily appreciate the advantages of the tub bath system.

The effect of the bath on the reduction of the temperature depends not only upon the temperature of the bath and the length of time it is given, but also upon the tendency of the temperature at the time. This patient has had her highest temperature between 5 and 11 o'clock at night, so that at the present time her temperature is tending to be higher than it was at any other time during the day. The chances are then that the reduction from this bath will not be as great as it was from the bath that was given her at 6 o'clock this morning, when her temperature fell from 103° to 98°. This does not mean that that bath was better than the one she is getting now, but that it was given at a time of the day when the temperature had a downward tendency. This bath will probably not reduce the temperature so much, because it is evening, and the tendency is for temperature to rise in the evening.

The reason for putting cotton in the patient's ears is that water is apt to get in and cause irritation. One of the complications of typhoid fever is suppuration in the ear canal, so that it is always well to protect the patient. You notice that the patient has an ice cap. The object of this is to keep the head cold without wetting the hair.

The patient having been bathed for fifteen minutes, she will be taken out and put to bed. The bed is prepared with rubber sheets and blankets, with a hot-water bottle for the feet. The patient will be given another drink of whiskey and allowed to rest.

The temperature will be taken an hour after the bath and recorded on the chart. The reason why we take the temperature an hour after, and not immediately, is that the temperature continues to fall for some time, and in about an hour will get the full effect of the bath. From this bath we expect an improvement in the quality of the pulse, and we expect her to feel better generally.

A patient during a relapse in typhoid fever goes through almost an exact reproduction of the disease proper; they are liable to all the complications, with the additional trouble that they are already reduced in strength, so that this woman is really in the sixth week of her illness, and for that reason is especially in need of the best treatment we can give her.

The diet is, of course, the strict milk diet, and she should get at least sixty-four ounces in twenty-four hours. That amount has not been reached, as she has had only forty ounces in the past twenty-four hours, and she should be urged to take more.

In the way of medicine, she is given strychnine, 1-32 of a grain every six hours, on account of her rapid and rather feeble heart action. She is given whiskey every three hours, and additional whiskey at the time of the bath. She has an injection of soap and water every second day, to move her bowels. Like many cases of typhoid fever, she is troubled with constipation. Diarrhœa in typhoid fever, as we see it in New York, is rather an unusual occurrence, constipation being the rule in nearly every case. I do not know exactly how to account for this, except probably on the score of the milk diet, and that the general management of the cases is such that they do not get a complicating inflammation of the bowel, causing diarrhœa. The diarrhœa in typhoid fever is really no part of the disease, but is caused by a complicating inflammation of the colon, and it is rather a sign of good treatment than otherwise that patients do not suffer from it.

THE COCAINE HABIT

BY E. H. MARTIN, M.D., CLARKSDALE, MISS

THERE is probably as little said in medical literature about the cocaine habit, and as many erroneous ideas held concerning the same as is possible, when we consider that it is with us always. These facts are my excuse for coming before the Mississippi State Medical Association with a paper which consists principally of a few observations and deductions of my own, obtained during the treatment of some cases of the "sniffing" habit.

The effects of a moderate dose of cocaine, ¼ to ½ grain snuffed into the nostrils, or of a larger dose under the skin, or of still more by the mouth, is that of mental exhilaration, physical well-being and muscular strength. This not to a very great degree from one dose, but a second and third and fourth dose, at intervals of half an hour to an hour, rapidly increase all of these effects, the mental excitement becomes intense, the pupils are dilated, the throat and lips dry, the heart beats like a trip hammer, respiration becomes deep and sighing, the brain is running under high pressure, thoughts flow like lightning, and, sometimes, words like Niagara. An intense desire is present to lead the "strenuous life" and to lead it right then; no plan seems unreasonable, if desirable, and no scheme impossible. The muscles feel as if they could never tire, and sleep and food alike appear as totally unnecessary adjuncts to human existence. One or two more doses, and the subject just has to do something unusual, and then generally gets into trouble according as to whether he is using whiskey or morphia as a moderator. For cocaine is very rarely used alone; its effects are so intense that

but for the counter-effects of whiskey or morphia, any continued cocaine intoxication would probably end in acute mania.

The cases of the cocaine and morphia habit combined are generally in white people and the cocaine makes very little difference in the cases; as a rule, enough morphia is used to control the effects of the cocaine or rather only enough cocaine is used to offset the stupefying effects of the morphia. It is an open question if the subject of the combined habit is not better off than one using morphia alone, except morally.

Among the negroes whiskey is generally used to moderate the effects of the cocaine; while "sniffing coke" a negro can drink three times as much whiskey as normally without alcoholic intoxication being evident. However, the combined use of whiskey and cocaine seems to smother the moral sensibilities almost entirely, and nothing is too low or degrading to be passed by if the subject's fancy is taken by it.

The remarkable wakefulness that attends and follows the use of cocaine by any method, is at first very pleasant to the subject, but as the stimulating effects of the drug wear off an intense weariness follows, the inability to sleep becomes intolerable, and the mental suffering great.

There is always present a distaste for food, due partly to the effect on the general system, but more particularly to the local effect of the drug in the blood upon the mucous membrane of the stomach.

These two effects, insomnia and anorexia, lead the subject to take more whiskey, and, finally, at the end of the spree, sleep is obtained through alcoholic drunkenness. The cocaine "sniffer" is apt to sleep very heavily and continuously after the drug is partly eliminated. He will also be found correspondingly stupid the next day, very much depressed, and complaining of vague pains. All of which demand more cocaine, and so the habit is kept up.

The effect of the drug on the muscular system is very peculiar. It consists of a tendency to tonic spasm of all the muscles, but more especially of the muscles closing the jaws. The hands are almost always clenched and the mouth is kept tightly shut, except when the subject opens it for a purpose—so tightly at times that teeth are ground down and gold crowns worn through during one spree. The muscular tension is terrific.

The increased heart's action and respiration have been mentioned; the effect on the kidneys is always great, and urine is voided frequently. Whether the drug is excreted in the urine, and the urethra and glans penis are the victims of local anesthesia, or whether through some effect upon the sexual centers in the brain and cord I do not know, but it remains a fact that when a subject is under the influence of the drug the penis becomes shrunken and bloodless and an erection is almost impossible. The fact is of importance where the drug is used alone or with whiskey. It makes no difference to the subject who uses cocaine and morphia because the morphia has not only already rendered the subject impotent but also indifferent to sexual feeling, and without desire. But cocaine alone, or cocaine with whiskey, has an effect many times greater than that which Shakespeare attributed to wine, of increasing the desire and taking away from the ability. A man whose system is filled with cocaine and whiskey has imagination and desire working under top pressure; his sexual passion is roused to the highest pitch possible, and his penis is as useless to him as if it were frozen. He is as was King David in the first chapter of the first book of Kings, a fair damsel may cherish him but he gets no heat. But, unlike David with the indifference of old age, the "coke" fiend is rioting in sexual desire mentally and his views are full of fire. The consequence is an indulgence in sexual perversion that further injures the subject morally, and later on a resulting mental depression and dejection that calls for more cocaine.

The local effects of the drug where used in the usual way of "sniffing" are very marked. The mucous membrane of the nares becomes engorged with blood, and bloody mucus is frequently blown from the nose; lated on a true inflammation is aroused and a condition of chronic catarrh established. During the time of its use the drug causes a constant sniffing and hawking and the throat and lips become dry; there is a constant licking of the lips and swallowing of saliva to relieve these symptoms.

After daily use of the drug for some time the necessary dose becomes enormous; one woman used sixty grains a day. The morning depression and aching and feeling of stupidity become harder and harder to relieve; the subject is perfectly miserable until enough "coke" has been sniffed to cause a dilatation of the pupils; then for an hour or so she is happy, but after that she is again a half-crazed being as she gets under higher and higher pressure, unless the strenuousness of her feeling is toned down to comparative contentment by means of liberal doses of gin or whiskey. She rarely cares for anything as bulky as beer because the stomach calls for neither food nor drink in quantity.

As will be inferred from the above, the period of euthanasia begins when the pupils begin to dilate; of course, these are not cause and effect, but both are effects, and the mydriasis is only an outward sign of the effect of the drug on all of the nerve tissues.

The mixed morphia and cocaine habit occurs mostly among men; very few cases have been reported among women. The reasons are obvious; these cases always have the morphia habit first and add cocaine later to brace them up when under the influence of morphia. The women find one drug habit enough, or find one drug hard enough to get on the sly, and so do not begin using cocaine. But, on the contrary, the "sniffers" are mostly negro women, principally prostitutes. The reasons for this are also obvious. The men try sniffing a few times and find themselves temporarily impotent; now a negro can't stand the idea of having his "courage" tampered with, so he gives "coke" a wide berth thereafter and sticks to gin. The women, of course, do not care; the prostitutes especially do not object to local anesthesia of an overworked organ; they also have to lose much sleep in their line of business and a little "coke" seems to fit their case exactly, so they use it very generally.

Now as to the treatment. The cocaine habit is as easily broken as the whiskey habit, and especial treatment is required if patient really desires to quit. A few days' bracing with strychnia will be all that is needed. If the patient also uses morphia he can be deprived of cocaine in one or two days, when it may take a couple of weeks or a month to take him off morphia successfully and nurse him back to health. Cocaine and whiskey are about on a par as "habits." Either one, unlike the morphia habit, can be abandoned by the simple exertion of will power. But to give the patient the will to will, and the will to will with, may be another question and the means for accomplishing the same may be as complicated as human nature. The effects of coca and cocaine require more study than has been given to them, especially as all of America seems to be about to adopt the use of coca in summer. At the present rate of increase in the use of a soda-water drink called Coca-

Cola there will soon be as many users of coca, and, therefore, of cocaine, as there are of coffee. Coca-Cola has already made millions for the firm manufacturing it, I am told. It probably is composed of the fluid extracts of coca leaves and Kola nut. It very evidently contains about 1-12 to ⅛ grains of cocaine to the ordinary drink. The amount may be less, as its effect should be heightened instead of moderated by the Kola, the active principles of Kola being caffein and theobromine and the effect of caffein similar to, but much less than cocaine.

I am not here to make a wholesale denunciation of Coca-Cola, the Kola part is no better, no worse, than coffee or tea, and there is not enough coca in the compound for one or two glasses to make much difference in a man's life. But where used to excess it would naturally lead to a Coca-Cola habit, and, finally, among the knowing ones, to the cocaine habit.

Coca leaves in South America have a remarkably beneficial effect upon the natives and upon Europeans who have imitated them in using the same. The effect is described as stimulating and supportive to the mind and body, also stimulating to the sexual organs; as permitting immense labors to be performed without food or sleep, etc. The effects of cocaine are similar in some respects, but the likeness is that of a corpse to one who once was, so much is missing. If the reports from South America are correct, and there is every reason to believe them authentic, then the most valuable principle of coca leaves must be some volatile substance that is lost in drying and transportation. Cocaine is only one of these alkaloids found in the leaf, and we could not expect it to possess all of the good or bad qualities thereof, but so far no extract of the leaves, no coca-wine or other preparation made from the entire leaf has anything like the good effect that is reported in South America from chewing the fresh leaves with a little vegetable ash. It remains for some enterprising manufacturing pharmacist to go to South America and capture all of the qualities of the fresh leaf and give us a preparation that may be valuable. At present there are no preparations on the market which seem especially indicated in any of the ills which flesh is heir to.

Returning to the Coca-Cola habit, let me say that I have never seen any serious effects from its moderate use, and I do not regard a single glass as more harmful than a cup of strong coffee. Ten or twelve glasses a day will practically unfit a man for business, as might ten or twelve cups of strong coffee or tea. The worst form of the Coca-Cola habit that has come to my notice is the way it is used by some students at one of our leading Southern universities. These young men buy Coca-Cola by the gallon, or in bottles, and drink it straight or with a little plain water while cramming for examinations. They sit up all night, driving sleep away with the Coca-Cola, and also unfitting their brains for work. If my estimate of ⅛ grain of cocaine to the ounce is correct, and my estimate is based only upon the effect of the stuff, upon guesswork in fact, but if I am correct, then a pint of Coca-Cola contains two grains of cocaine, entirely too much for a boy to take during one night, and not to have to pay for it later.

I wish to call attention to the peculiar fact that cocaine by the nose, and, *i. e.*, any soluble drug by the nose, has a more concentrated effect upon the brain than when given in any other way, even hypodermically. The explanation of this new, and, at first glance, strange fact, is that the bulk of the absorption of the drugs from the nose takes place through the vessels which penetrate the cribriform plate of the ethmoid. Consequently the remedy administered by the mucous membrane of the nose must reach the brain, and especially the cortex, in a much more concentrated state than when administered at a distance, even subcutaneously.

TREATING A CARBUNCLE.

BY WILLIAM WORMLEY, M.D., PHILADELPHIA.

THE carbuncle is one of those common diseases which have received small attention from the medical profession. It is now known to have a pathological process of its own, being of microbic origin. This fact has been proved by the researches of many bacteriologists, such as Bockhart and Baum.

The staphylococcus aureus is the commonest microorganism found in carbuncles, although in some cases the albus pyogenes form, or the two combined, are associated. But these latter forms are of less importance in the causation of this disease. There are various ways of invasion, the coccus entering the skin through the hair follicles, the sebaceous gland ducts, the sweat glands, or through an abrasion of the epidermis. Our parents believed that this disease was of constitutional origin, and in fact an outlet for the "humors" of the blood. All that can be claimed for the constitutional feature is that a depressed physical condition increases the vulnerability of the tissues and predisposes to acute suppurations. Even in diabetes, so prominently associated with carbuncle, the patient does not necessarily have the disease. The diatheses are greatly overrated as etiological factors, and it is probably true that the disease is not found more often, relatively, in tubercular, alcoholic, cachectic cases than in those of good health. The explanation of this truth is that the association of these constitutional conditions with carbuncle in a causative relation is accounted for by the fact that carbuncle statistics used in routine by writers and teachers have been gathered from the older statistics coming from public hospitals and almshouses rather than from private practice or the modern private hospitals. Whoever overlooks the local origin and local nature of the carbuncle is handicapped in the proper care of his patient. It is a disease of middle life, while its relative, furuncle, is conspicuously a disease of childhood.

The text-books describe a carbuncle as an acute suppurative inflammation of connective tissue, and hence connected to osteomyelitis, parenchymatous abscess, acute abscess, furuncle, and other suppurative diseases of the skin. This group all have a local origin, all involve the same histological structure, and all are due to the invasion of the same pus coccus, or at least one of the pyogenic cocci. When we compare the difference in clinical history, the divergence in pathological process, and the various modes of termination, we find the differences due to anatomical structure or region concerned. These differences are quite as marked in the skin of different regions of the body, compared to the changes found in one organ when compared with other organs. These alterations in histological anatomy are connected with the thickness, density, toughness, elasticity, vascularity, the surrounding attachments, and the adipose tissue.

A true furuncle is found if the deeper region of the epithelial structures of the follicle or the sebaceous or sweat gand is invaded. Obstruction to the outflow of fluids and pus, due to the depth and partial closure of the passageway, appears. There is a clinical picture of tension, stasis, liquefaction (pus), a limiting wall,

and in the center a cone-like slough, consisting of the remnants of the gland or follicle surrounded by connective tissue. Should the pus coccus pass through the epithelial layer of the skin into the cutis vera, there results either an acute abscess, filled with inflammatory product, or a carbuncle, with its dense infiltrated mass of undigested connective tissue without any circumscribed cavity. The differentiation between an abscess and a carbuncle depends on the histological structure of the skin of the particular region involved. The region of predilection of carbuncle is, "the dense and fibrous integuments over the posterior median line of the body." "The skin of this region is characterized by (1) its extreme thickness, especially the relative thickness of the cutis vera, (2) the aponeurotic-like density of the papillary layer, and its having few and small openings, (3) the more direct connection of the subcutaneous tissue with the reticular part of the skin as one continuous structure, (4) the number and size of the polygonal spaces found in the subcutaneous and reticular strata, caused by the diverging and interlacing bundles of dense fibrous tissue which make up the framework of these strata. These polygonal spaces are chiefly occupied by adipose tissue constituting the fasciculus adiposus, and a delicate network of fine connective tissue; (5) the presence of Warren's fat column, extending from the adipose tissue below to the base of the follicles of the lanugo hairs above, with their horizontal branches; (6) the dense, tendon-like, cone-shaped, fibrous bundles which extend from the base of the adipose column obliquely, to be inserted into the muscular fascia beneath." These factors and conditions are necessary for the production of a typical carbuncle.

The adipose tissue succumbs readily and liquefies, and as tension increases pus is forced to the surface through the slender adipose columns into the hair follicles as the means of escape. Thus we have the numerous pus points and eventually the cribriform condition of the surface of the skin, so characteristic of carbuncle. As tension increases the inflammation is forced to extend laterally farther and farther from the original focus through the polygonal spaces and channels occupied by the rapidly diminishing delicate connective tissues and fat. The characteristic peripheral extension and the broad, flat, indurated mass passes between the still resisting dense papillary layer above and the muscular fascia beneath.

Should we cut down into this mass, then we would find the numerous small pus points and channels, but no proper pus cavity, which are well recognized features of carbuncle. This process proceeds until the skin over the original focus becomes necrotic and sloughs away, which relieves the tension and peripheral pressure. This is the first step towards the natural limitation of the disease. Should the infiltration and induration have already extended so far as not to be influenced by this diminution of tension, then it will continue to spread indefinitely, or until the sloughing process following in its wake has gained on it sufficiently to stop the peripheral tension. After all the long-resisting dense fibrous parts described above, which began to die with the skin, have yielded and sloughed piecemeal, we have the crater-like cavity coextensive with the indurated mass.

While some authorities state that carbuncle may occur in any part of the body, the true carbuncle is found in certain regions.

A typical carbuncle requires continued tension in inflamed tissues, one part of which resists the digestive or liquefying process of suppuration longer than other parts. There are many subcutaneous inflammations which are called carbuncles that are simply abscesses. There may be cases of carbuncle in which a suppurative inflammation of the skin and subcutaneous tissue cannot be definitely classed either as a carbuncle, an abscess, or a furuncle, or that the characteristics of one may predominate, while those of the other are present in some degree.

The treatment of carbuncles is to endeavor to limit its extent and duration, arresting suppuration and preventing septicæmia. The story of the means and the methods of treating carbuncle would fill a volume. Many surgeons rely on a purely expectant course and discard all active means, relying on internal medication, and treating the carbuncle as a sef-limited disease, whose course was not to be disturbed. Most surgeons now, however, recognize the necessity of doing something to hasten sloughing in order to relieve tension, and thus limit the extent of the disease and prevent absorption of disease products. Caustics, incisions, single multiple, subcutaneous, and the time-honored crucial incision, are relied on. There are to be recommended also if nothing more efficient can be done. These measures are inadequate to fulfil the indication, although they may be sufficient for many.

There is no doubt that a general tonic treatment helps the patient's condition in a general way; for example, the use of a stimulating tonic is excellent. Arsenic, quinine and iron are old tried remedies. One prescription used by Dr. Lincoln is often useful:

℞ Potassii iodidi ..... ℥ss
Ferri pyrophosphatis ..... ℥i
Syrupi,
Aquæ, aa. ..... f ℥ij
Sig: A teaspoonful diluted after meals.

Professor Gross recommended the painting of the skin with iodine to abort a carbuncle, following with a cover of this sort:

℞ Olei terebinthinæ,
Olei olivæ,
Tincturæ opii, aa..... ℥ss

This authority reported excellent results if applied soon enough. It is practically an antiseptic treatment, destroying the cocci if they are not too firmly established in their location.

Hall recommends as an application:

℞ Tincturæ florum arnicæ ..... ℥i
Acidi tannici,
Acaciæ pulveris, aa. ..... ℥ss
Sig: Paint carbuncle with this every fifteen minutes until thick coat forms.

Page recommends scraping, and even the "excision and scraping," as advocated by Reuhten Parker, are excellent resources in certain stages after sloughing has begun, but they can be applied only to those cases where the disease is not extending.

Graham recommends total extirpation of the mass. If this is done early the entire skin can be saved. If it is done later there will be some loss of skin over the original focus, but the patient will be saved from all the dangers of septicæmia, the cause of death in carbuncle, usually miscalled exhaustion. If the patient already have septicæmia, and there remains a ring of indurated tissue beyond the sloughing center, extirpation is still the best means of saving the patient's life. It can be tried in all cases, whatever the stage of progress, except those in which the disease has clearly run its course, where the excision and scraping of ruptured parts would be sufficient. Graham claims it to be a rational, life-saving, and time-saving method, which will commend itself to all who try it. The reasons that require the

amputation of a gangrenous limb can be urged in favor of total removal of a carbuncle.

The technique of the operation is as follows: Anæsthesia is required, which should be as brief as possible, and not profound, if the patient already suffers from septicæmia. A cross incision should extend to just beyond the borders of the induration, the four flaps being dissected up to the limits of the disease, which can usually be made out easily. By the use of volsella forceps and a knife the mass can be readily dissected out. Then stitch the four flaps together toward the center, more or less closely, according to the amount of necrosis and sloughing. If the extirpation is done early there will often be no loss of skin and but little subsequent discharge. There are no blood vessels under the skin in the carbuncular regions that should alarm the surgeon.

THE GERMICIDAL POWER OF THE BLOOD.

BY M. SHELLENBERG, M.D., PHILADELPHIA.

(Second Paper.)

THIRTY years ago Lewis and Cunningham proved that bacteria thrown into the circulation rapidly disappear. They found that in the blood of twelve animals which had been treated with such injections bacteria could be found in only seven after six hours. In thirty animals bacteria were found in the blood of only fourteen after twenty-four hours, and in seventeen animals bacteria were found in only two when the examination was made from two to seven days following the injection. Later Traube and Gscheidlent found that arterial blood, taken under antiseptic precautions from a rabbit, into the jugular vein of which one and one-half cubic centimeters of a fluid rich in putrefactive germs had been injected forty-eight hours previously, failed to show decomposition for months afterward.

In the case of extra-vascular blood Grohmann, in his researches upon the cause of coagulation, found that anthrax bacilli, after being kept in plasma, were less virulent. In 1888 Nuttal, using defibrinated blood taken from rabbits, mice, pigeons and sheep, found that this blood destroyed the bacillus anthracis, bacillus subtilis, bacillus megatherium and staphycoccus pyogenes aureus when brought in contact with them. He also confirmed the further finding of Fodor, that after a time the blood loses its germicidal power, becoming a good culture-medium for the germs.

Missen reached the following conclusions: "(1) The addition of small quantities of sterilized salt solution or bouillon to the blood does not destroy its germicidal properties. (2) Cholera germs and Eberth's bacilli are easily destroyed by fresh blood. (3) For a given volume of blood there is a maximum amount of bacilli which can be destroyed. (4) Blood whose coagulability has been destroyed by the injection of peptone is still germicidal. (5) Blood, in which coagulation is prevented by the addition of 25 per cent. of magnesium sulphate, has its germicidal properties decreased. (6) Filtered blood plasma from the horse is germicidal." Behring thought that the action of the blood serum of the white rat on anthrax bacilli was due to the unusual alkalinity of the blood of that animal. He showed that the blood serum of the white rats is somewhat more alkaline than that of certain animals which are more susceptible to anthrax, such as the rabbit, guinea-pig and cow. His deduction is not justified, for in other animals there is more alkalinity, and yet they are susceptible. In 1890 Buchner has made a valuable contribution to this subject of the germicidal properties of blood. "(1) The germicidal action of blood is not due to the phagocytes, because it is not influenced by the alternate freezing and thawing of the blood by which the leucocytes of the rabbit are destroyed. (2) The germicidal properties of the cell-free serum must be due to its soluble constituents. (3) Neither neutralization of the serum nor the addition of pepsin, nor the removal of carbonic acid gas, nor the treatment with oxygen have any effect upon the germicidal properties of the blood. (4) Dialysis of the serum against water destroys its activity, while dialysis against 0.75 per cent. salt solution does not. In the diffusate there is no germicidal substance. The loss by dialysis with water must be due to the withdrawal of the inorganic salts of the serum. (5) The same is shown to be the case when the serum is diluted with water and when it is diluted with the salt solution. In the former instance the germicidal action is destroyed, while in the latter it is not. (6) The inorganic salts have in and of themselves no germicidal action. They are active only in so far as they effect the normal properties of the albuminates of the serum. The germicidal properties of the serum reside in its albuminous constituents. (7) The difference in the effects of the active serum and that which has been heated to 55° C. is due to the altered condition of the albuminate. The difference may possibly be a chemical one (due to changes within the molecule) or it may be due to alterations in mycelial structure. The albuminous bodies work upon the bacteria only when the former are in an active state."

There are two theories as to this disease. On the one hand Oliver and Schafer believe that the glands produce a substance which maintains muscular tonus; Dubois's theory is that they destroy toxic principles originating in the body, especially those resulting from muscular work. At present the latter theory seems the more probable, since it receives some confirmation from the experiments of other observers. Charrin and Langlois report that the suprarenal capsule, triturated with nicotine, lessens its poisonous power.

Cutting down the conclusions of many observers we may state that many investigators conclude that the germicidal constituent of blood serum is an alkaline compound of serum-albumin. They also found that heating the serum-albumin alkaline solution to 65° C. or higher destroyed its germicidal action, and they explain this effect of heat on blood serum and on their artificial solution by supposing that the high temperature breaks up the combination of the alkali with the serum albumin. Furthermore, they found that a serum which had been rendered inactive by a temperature of 55° C. could be regenerated in part, at least, by the addition of the small amount of alkali mentioned above.

Freshly drawn blood rapidly decreases in alkalinity on standing *in vitro* an explanation of the fact that blood serum rapidly loses its germicidal properties naturally suggests itself. The above-mentioned investigations are very valuable inasmuch as they show the important rôle which the small amount of alkali plays in the germicidal action of the blood serum. This had, indeed, already been demonstrated by Fodor by quite a different line of investigation.

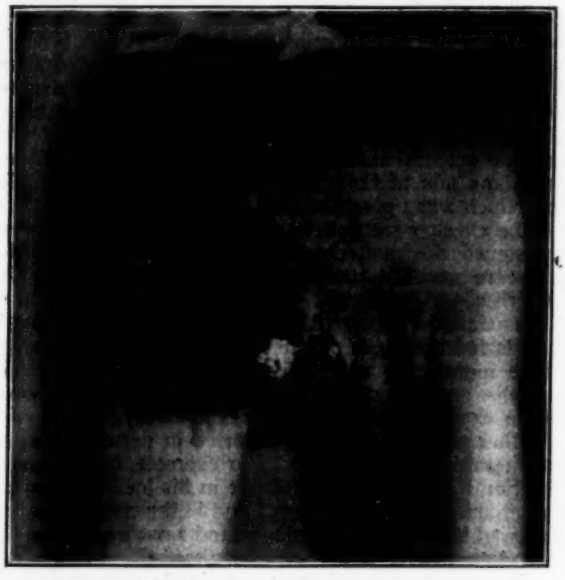
There are some additional points of interest in the

theory of Emmerich and his assistants. As has been stated, they believe that the serum-albumin is the germicide, but they think highly probable that only a comparatively small part of the albumin is active and this small part, they suppose, originates in the albumin of the daily food, which is converted into lymph cells, and by the disintegration of these it passes into solution in the blood. They admit, however, that there are some reasons for believing, with Buchner, that the whole of the serum-albumin is active. They state that it is possible, but highly improbable, that the germicidal agent is not the serum-albumin, but some substance which is precipitated along with this by alcohol and other agents.

PHLEGMON AND GANGRENE OF SCROTUM; SKIN-GRAFT.

BY H. O. SOMMER, M.D., WASHINGTON, D. C.*

THE photograph shows a case of what was a severe case of bilateral phlegmon and gangrene of the scrotum some days after removal of the necrotic tissues and with the scrotal contents clean but covered with healthy but excessive granulations. The patient, a New York ditch laborer, gave the characteristic history of traumatism received through a "straddling fall" on the perineo-scrotal region, indicating urinary infiltration as the cause. This was verified during the time the case was healing and granulations forming by a long-continued



smell of the urine over the testicles, etc., which disappeared after spontaneous healing, apparently, of the injured urethral portions from which infiltration, had taken place. Owing to the foulness of the case it was necessary to first build up the patient and not advisable to attempt a radical replacement of the scrotum by a pedunculated plastic of the skin, and since, however, the granulations threatened too much exuberance before the adjacent skin of the thigh became trustworthy or the remaining skin covered spontaneously, a Krause-Thiersch was performed as recommended by Tillmanns for granulating surfaces and a "respectable" covering of the exposed testicles, etc., attained by the time the patient was discharged at his own wish.

The case is interesting as, whereas the literature of cases in the index catalogue of the Surgeon General's library is very large, there is little evidence of many successful radical plastics having been performed; most of the cases were either left to heal by extension of the remaining scrotal skin or by grafts being placed, as in my case. Most of the cases seem to have been reported from private practice and there is a conspicuous absence of reports of cosmetically successful radical plastics, with illustrations of complete replacements by operation from our large surgical clinics. Evidently results are not often startlingly beautiful. In fact, healing by spontaneous growth seems to be the favorite proceeding, and, in spite of the fact that the German authorities advocate radical replacement, the gist of the subject in "Dennis's System" would seem to point to the fact that the spontaneous covering is the favorite and successful method.

* Late of Genito-Urinary Service of Dr. Carleton, Metropolitan Hospital, N. Y.

GLEET.

BY J. HUBLEY SCHALL, M.D., BROOKLYN, N. Y.,
Pathologist to Memorial Hospital.

TEN years ago every case of so-called gleet was supposed to be due to a stricture of the urethra. To-day urethroscopic inspection of a chronically inflamed urethra indicates that such is far from being a fact.

There are few conditions that try the patience of the practitioner more than these troublesome, intractable urethral discharges, which have lasted months, even years, and often lay the foundation for the most pronounced cases of neurasthenia.

Some of the best authorities state that a large proportion of cases are eventually cured, and a certain percentage become chronic and defy every curative method known to modern science.

No doubt that the use of the urethroscope in the diagnosis and treatment of urethral diseases has given us wonderful assistance in clearing up what would otherwise be an incurable gleet.

The urethroscope, which I have used for some time, and seems to answer all requirements, is known as the "Chetwood urethroscope." If it is skillfully manipulated the entire canal from the meatus to the orifice of the bladder can be inspected.

Gleets that continue for months are often due to a membrano-prostatic catarrh. The reason why these cases are so stubborn is because treatment is seldom applied to the diseased area. Results can only be effected by applying treatment to and directly behind the membranous urethra.

Glandular urethritis is another source of chronic urethral discharges. By the aid of the urethroscope the membrane round Littré's and Cowper's glands will appear congested and swollen. The urethral follicles are dilated and are observed to have the appearance of whitish pin-heads. Often these dilated glands form small cysts, which finally break down; a contraction of the mucous membrane follows, and a stricture results.

Congested urethral patches frequently cause gleet. These patches are often found in the anterior urethra, and are first superficial; they can be readily seen with an electric light.

Urethral warts are a fruitful source of an obstinate gleet. In the clinic of Prof. Finger, of Vienna, these warty growths are frequently seen. They occur mainly in the penile urethra, often in conjunction with gonor-

rhœa. I have seen these warts just within the meatus, and they also occur some little distance within the urethra.

Chronic inflammation of the seminal vesicles produces a gleety discharge. The examining finger reveals swelling and tenderness of the vesicles. Inflammation of the seminal vesicles is by no means a frequent complication of gonorrhœa, as many suppose.

Gleet is a common symptom found in much debilitated individuals, and in such cases there is no lesion whatever, but a general tonic and hygienic treatment is called for.

Another cause of gleet is a contracted meatus, which acts as an irritant reflecting back into the canal.

We must keep in mind that many of the so-called gleets are purely mental. In many instances the patient cannot detect the moisture about the meatus except by repeatedly squeezing the urethra, and in a large percentage of cases we can attribute the discharge to the irritation set up by this practice.

Treatment: In mebrane-prostatic catarrh the most reliable remedy will be found in one of the salts of silver, nitrate of silver, from one-half grain to twenty grains to the ounce; five to fifteen drops of the silver solution being instilled into the deep urethra twice a week, the strength of the injection being gradually increased. The solution should not be allowed to flow forward into the anterior urethra.

Glandular urethritis: One of the most satisfactory methods of treatment for this obstinate condition is internal urethrotomy, being sure to adhere to the roof of the urethra and cut in the median line. The resulting scars tend to atrophy the glands.

Congested patches are best treated with the aid of the urethroscope. The red patch is brought into view and swabbed with nitrate of silver, two to eight grains to the ounce, then dried and swabbed again with glycerine. This should be repeated once a week.

Chronic inflammation of the seminal vesicles calls for massage and requires the utmost gentleness. The method advised by Fuller should be followed. If the patient shows evidence of tuberculosis or epididymitis, this method of treatment is contra-indicated.

Finger, of Vienna, suggests the nitrate of silver and sulphate of copper in gleet of gonorrhœal origin. In recent cases, where gonococci are yet present, nitrate of silver should be employed; in inveterate cases, where no gonococci are present in the shreds, the sulphate of copper will often prove effective.

In all cases it is best to begin with solutions in order to test the reactive power of the urethra.

In chronic gleet the use of picric acid must not be forgotten. The drug is used in a solution of 1-200 or 1-100. It is generally forced past the compressor urethræ muscle by means of a deep urethral syringe or catheter. The quantity used is from ten to six drops. If the fluid enters the bladder no harm can result.

POINTS FROM A PHYSICIAN'S NOTE-BOOK.

REPORTED BY DR. A. C. GRIGGS, PHILADELPHIA.

CLINICAL EXPERIENCES IN INFLUENZA.

HISTORY. Probably more names have been given epidemic influenza than almost any other known disease. Some of these are: Epidemic catarrhal fever, rheuma epidemicum, cephalalgia contagiosa, Ziep Schafhusten, Huhnerweh, Blitz catarrh, Russian disease (as the epidemic of 1889-90 started in that country), Italian fever, Spanish catarrh, etc., according to the variety of symptoms or the locality from which the disease came.

Like colds, influenza shows the tendency to elect the weaker points in a system. The systematic symptoms occur in varying severity in all its varieties, while the catarrhal symptoms cluster about certain organs where the power of resistance seems to be naturally least.

Influenza is an ancient disease, dating back to before the Christian era, an attack having been known to occur in the Athenian army in Sicily 415 B. C. After this the disease appeared at irregular intervals, spreading over Europe generally in the direction of from east to west, of which no exact or complete records have been kept up to the year 1510, when it prevailed in the British Isles to an alarming extent, and quite an accurate account of the epidemic was written. Other well-authenticated outbreaks followed in the years 1557 to 1879, while we have it in modified form every winter.

Some Varieties of Influenza.—Undoubtedly one of the most interesting phases of the disease is that series of cases of fever with excessive sweating.

Of course influenza is generally accompanied by relaxation of the skin, following the initial period, and the subsidence of the earlier symptoms. This symptom often continued in a mild way for days and weeks. Some of the cases reported by Curtin and Watson were marked by such excessive relaxation that they could not but strike the observer as unique. They explained this phenomena as a combination of the general catarrhal conditions, a hydrorhœa of the skin, or what might be termed for the want of a better name, a cutaneous catarrh of the sudoriforous glands.

In the early epidemic of 1889-90, a number of cases in which there was this tendency to a remarkable degree, continued for weeks without emaciation or exhaustion, or induced anæmia. These cases often perspired to such an extent that in cold rooms they seemed enveloped in steam, and at times they were observed in bed the ear which was uppermost and the corresponding hollow of the cheek were full of water. At times the sweat moistened the mattress, and from below upward the moisture would outline the form of the patient on the coverlid.

In one case reported by these observers this condition lasted one week, in another four weeks, in another three months, in others five months, and in two six months, and one case affected a year ago, even now on slight exposure to cold continues to sweat profusely.

Other practitioners have reported in periodical medical literature, similar cases. For example, one writer in the South reporting an epidemic in his locality, of what he termed a "sweating fever," and in the communication referred to asked information as to its nature. From the description given it was evidently something more than ordinary epidemic influenza, or simple catarrhal fever as usually observed. These cases generally began with an attack of influenza, or had some of the complications and sequelæ of influenza, viz., the pulmonary or cardiac symptoms (angina pectoris, pericarditis, and heart failure), or affections of the peripheral nerves of one or both arms, rheumatoid pains, meningitis, neuritic diarrhea and other catarrhal affections, and insomnia. With the profuse sweating the temperature night and day was generally near the normal, often either merely a little above or below.

It is easy to understand that in different periods of an epidemic, different structures may be predominantly affected, viz., an epidemic of influenza in which cardiac symptoms predominate might under depletion and the unwise use of depressants come to resemble the so-

called "cardiac disease" of ancient times; or where the vasomotor nerves especially suffered under like improper management, overheating, excessive covering, and the abuse of diaphoretics, a genuine "sweating sickness" might be produced; or the extreme sweating producing copious miliary eruption, we might with justice call it the miliary "fever."

The symptoms and conditions common to all the above-mentioned diseases were present: Epidemic; sudden in onset; commenced with chilliness or rigor; accompanied by more or less intense headache and fever; the strong were attacked rather than the weak, the comfortable classes rather than the extreme poor; all were attended by sweat of unpleasant or fetid odor; occasional varied hemorrhages in all; vomiting or purging at times in all; meningeal and other nervous symptoms; nervous prostration and prickling pains; sudden paralysis, heart excitation, heart failure, pericarditis; rheumatic pains—gouty symptoms; all were infectious or contagious; all had catarrhal symptoms, and sudamina or other eruptions; milliaria rubra or milliaria papulosa: in all the atmosphere; stimulants were in all beneficial; excessive secretion of urine and sweating came together; all were alike sensitive to colds and rafts; checked perspiration caused diarrhœa; relapses were frequent.

The sequelæ in these cases are similar, the general health being disturbed. There may be dropsy, consumption, heart failure, low fevers or forms of fever followed; insanity and suicide were sometimes noticed.

From a brief study of the foregoing, all these diseases are analogous. Certain marked peculiarities not found in other diseases generally were common to all. The most marked is sweating, so that from the descriptions which have come down to us one could see little reason why the name of "sweating sickness" might not have been applied to many of them (at least in some of their extreme and varied manifestations).

The group of nervous symptoms common to all is very striking and peculiar. These diseases seem to have been all recognized as contagious or infectious, and occurred as epidemics and often seemed to supplant one another rapidly. The rheumatoid and gouty symptoms, the heart complications, while in some more prominent, existed in all. The description of the cardiac disease might be applied line for line to some of the severe cardiac influenzal cases recently met with, and at times associated with these was profuse sweating, as profuse and overwhelming as that described in the "sweating sickness" of antiquity, without its great mortality.

General Characteristics of the Disease.—Returning to the general consideration of influenza, the victim is attacked without distinction, age, sex, occupation, or social standing. Previous or present illness affords no protection. One attack renders no immunity from another.

Although influenza may appear in any season of the year, yet it occurs usually in the autumn and winter. Latitude has no effect, as in the epidemic of 1837 it appeared at the same time in England and Cape Colony; that is, in directly opposite zones and seasons. Climate has no influence, as it may appear equally in the dampest and driest regions.

The rapidity with which the disease spreads, and the great numbers who suffer from it at the same time point to some specific poison which is carried by the air as a disseminating medium and excites the disease. Anciently the poison was supposed to be the sulphur and other matter thrown from the volcanoes, which was carried about in dust-fog currents, as it was noticed that a foul fog generally was seen before an epidemic or accompanying it.

Bacteriologists have searched for the micro-organism of influenza without success. For several years the diplococcus pneumoniæ of Fraenkel and Weichselbaum, the streptococcus pyogenes, the staphylococcus pyogences aureus, and several scattering forms were the only ones found, until Dr. Pfeiffer, of Berlin, in 1892, discovered a bacillus in the secretions of patients suffering from influenza, which was declared by Koch, Kitasato and others to be the true germ of this disease. This bacillus was about the thickness of bacillus mouse septicæmia, but only half the length. As only the two ends stain, it is very hard to distinguish it from the diplococcus and streptococcus. For this reason former observers seeing these mistook them for the latter forms.

There is no disease in which the characteristic symptoms are as protean as in influenza; these symptoms vary greatly in point of prominence and severity. The predilection depends upon individual weakness and the susceptibility of certain systems, as the nervous, respiratory, alimentary, genito-urinary, etc., to disease. The severity depends in a great measure on the condition of the patients, at the time of the attack, as to their resisting powers, the amount of exposure to which they have been subjected, the character of the epidemic, etc. Almost every one during an epidemic is attacked, although some suffer to such a limited degree, as a slight headache, gastric disturbance, or a feeling of languor, that they think they have escaped. The varieties of the attacks during the different epidemics have given rise to several classifications, depending upon the different seats of the disturbances, e. g., cephalic, thoracic, abdominal, cerebral, guttural or bronchial, intestinal or typhoid. This latter was the classification of Sydenham, and depended upon epidemics extending over a period of three hundred years. The classification preferred at the present date seems to be that of the nervous, catarrhal and gastric.

Characteristics of Epidemics.—Adams, for an article on "The Influenza in Philadelphia," sent out letters to several hundred physicians, and from a study of these answers came the following conclusions:

(1) The percentage of cases of epidemic influenza varies in an epidemic from 5 to 90 per cent. of all cases treated by physicians. The average percentage seems to vary between 20 and 50 per cent. The disease seems to spread from case to case more slowly than it did two years ago.

(2) The symptoms which constitute the diagnosis are generally accepted as the same. These symptoms are the same as those which have been described as occurring in other epidemics of the same disease, running as far back as authentic accounts can be found, showing the lack of change in the character or virulence of the poison for at least 200 years.

(3) Some variety of opinion exists as to the natural divisions in which cases can be placed, but probably nearly all accept as the basis for classification the presence or absence of several local manifestations. There seems also a general agreement that cases can change quickly from one form to another.

(4) A great variety of treatment prevails, dependent on the conditions present demanding recognition. To do this subject justice generalization will not suffice; to repeat what has been better said already is unnecessary. However, no specific seems to have been fully established as yet, and the use of the newer antipyretics in a routine way is discouraged. All authorities are agreed on two points, however: (*a*) complete rest during acute

attacks of epidemic influenza, and (*b*) extreme care and caution during convalescence.

(5) The mortality of epidemic influenza this winter has been low, considering the number of cases affected. The mortality of two years ago is greater, due probably to the virulence of the poison, and, possibly, to the lack of care in convalescence.

(6) Later epidemics are milder in symptoms, course and treatment.

(7) There seems to be more disease of other kinds, severer in character this winter than in other winters in which no epidemic existed, many diseases having engrafted on them more or less influenzal symptoms.

Prescriptions Useful in Influenzal Colds.—The following are useful drugs as occasion arises: tannic acid, chloride of ammonium, antipyrin, antikamnia, benzoin, camphor, cimicifuga, cocaine, cubebs, electricity, Hoffman's anodyne, ipecac, hot fomentations, Turkish baths, opium, sulphonal, phenacetin, phenalgin, nitrate of potassium, quinine, salol, salicylates, benzoate of sodium, aconite.

For influenzal bronchitis:

℞ Morphinæ sulphatis.....gr. ss
Potassii bromidi,
Potassii citratis, aa.....ʒij
Syrupi ipecacuanhæ.....ʒij
Succus limonis.....ʒiss
Syrupi simplicis, q. s. ad.....ʒiij

Sig.: Two teaspoonfuls every two hours.

When expectoration is established, replace the ipecac and potassium citrate with squills and ammonium chloride; or—

℞ Potassii citratis.....ʒi
Apomorphinæ hydrochloratis.....gr. i
Succus limonis.....ʒi
Aquæ, q. s. ad.....ʒiij

Sig.: Dessertspoonful every three hours. Or:

℞ Morphinæ sulphatis.....gr. i
Potassii citratis.....ʒiij
Syrupi ipecacuanhæ,
Syrupi scillæ, aa.....ʒiv
Glycerini.....ʒss
Syrupi.....ʒss
Aquæ, q. s. ad.....ʒiij

Sig.: Teaspoonful every two hours.

For the rheumatic pains and fever:

℞ Sodii salicylatis.....gr. clx
Aquæ menthæ piperitæ.....ʒiv

Sig.: Drachm every three hours.

For the fever:

℞ Spiritus Mindereri.....ʒi
Spiritus ætheris nitrosi.....ʒiij
Tincturæ aconiti.....mxxx
Papainæ.....ʒij
Aquæ, q. s. ad.....ʒiv

Sig.: Dessertspoonful every two hours.

ACUTE DELIRIUM FOLLOWING THE GRIPPE.*

BY F. C. SIMPSON, M.D., LOUISVILLE, KY.

THREE weeks ago a lady from New York, aged about twenty-eight years, consulted me. She had a severe sore throat, some cough and bronchial irritation, and a most intense headache—there appeared to be an acute bronchitis. The next day she developed all the symptoms of the grippe, headache, backache, muscular soreness, etc., and she complained intensely. At the end of a week stupor came on, which lasted four or five days. During the acute symptoms of grippe her temperature ran up as high as 105° F., lasting two or three days, then came down to normal. Since that time she has had practically a normal temperature, pulse 80 to 90. A week ago she developed active delirium which has gradually grown worse, becoming more and more violent, and is now taking on that form of delusional insanity.

The question I want to ask is, what is likely to be the termination of this condition? She is at times perfectly wild, almost violent, and has to be kept under hypnotics all the time in order that she may be in a comfortable condition.

Dr. J. B. Marvin: I would like to know more about the antecedents of this case before expressing an opinion. This is probably not a case of acute delirium, which has such an ugly outlook and which may occur under the conditions mentioned by Dr. Simpson, but was rather a case of functional, inorganic mental shock, so to speak.

Grippe is a protean malady, out of all proportion to what we ordinarily think, and the grippe such as we have been having lately with as marked symptoms, with as high range of temperature, ingrafted on a patient with hysterical tendencies, might leave in its wake some condition of cerebral exhaustion, neurasthenic in character, and I would rather take a favorable outlook, calling it a case of curable delirium.

Dr. R. T. Yoe: I had a case something like this a year ago, a lady who suffered with a most severe type of headache, etc., and I came to the conclusion that she had a cerebral tumor. Dr. Dabney saw the patient with me and came to the same conclusion. Death occurred about two weeks later; no post-mortem was allowed, so I am not certain whether there was a brain tumor or not.

Dr. S. G. Dabney: In the case referred to by Dr. Yoe there was double choked disc, and I do not believe there is much doubt about the woman having a cerebral tumor. When I saw her she was conscious; there was not at that time much delirium; she was rather in a stupid condition, but could be roused. She had some little interference with muscular power, one side being much more affected than the other, and she was very weak. There had been no convulsions, but she had constant and severe headache, and with this history, and particularly with the typical intra-ocular symptoms of increased intra-cranial pressure, I felt sure the woman had a brain tumor and gave that opinion with the prognosis that she would die, which she promptly did.

I have seen two cases where unusual results followed the grippe. In one case a lady I saw in consultation with intense laryngeal irritation. Her attack was followed by decided loss of memory. It is true the physician in attendance had given her bromides and she took much larger doses than had been advised. She received 120 grains a day for several days, and this possibly had something to do with her condition, but I believe the grippe was largely responsible for it. She fully recovered after several weeks.

I have seen one other such case, and both followed the grippe.

*Reported to the Louisville Medico-Chirurgical Society.

—A correspondent of *American Medicine*, noticing a statement in the *Philadelphia Medical Journal*, that oil of pennyroyal is antagonistic to mosquitoes, says that this is only partially true, for it is only while the pennyroyal is wet that the insects keep away. When allowed to dry on the skin the odor will attract the pests. He advises the use of oil of cassia, in preference.

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NEW YORK, JANUARY, 1902.

"God's best gift to us is that he gives not things but opportunities." ROLLINS.

IN extending to our readers the compliments of the season, we wish to offer also best wishes for the coming year. Our effort will be to make the TIMES for the ensuing year more practical and helpful to our readers than ever before. If this attempt is to be successful, we must have their active coöperation. There are many ways in which this can be done, where there is a disposition. Some can write essays, others will report instructive cases in practice, and all may send us bits of interesting experience, for all of which the TIMES will find a niche.

"Where there is union there is strength," and if our readers will unite with us in the efforts to publish a better journal, the object will be accomplished. With this number the TIMES commences its thirtieth year of publication, and so far as age goes it should be in its very prime. Its corps of writers for the present year has been enlarged, and no expense will be spared to make its pages all that the most fastidious and critical can desire. It is published by medical men for practitioners of medicine solely, and not in the interest of any mercantile business or trade.

Its platform is broad enough to cover all that is true in medicine whatsoever its source, and while it has no sympathy with the fads in practice, it will be sufficiently charitable to give all things a fair hearing, and let them rise or fall as their merits determine.

It is our purpose to always stand where we "can see all around," and not be held by any "hide-bound rules" which might deter our progress.

AN attempt is being made to unite the County Medical Association with the Medical Society of the County of New York, and each society, we are informed, has appointed a committee of five to this end.

It will be remembered that the Medical Association of the State and County was organized some years ago to uphold the Code of Ethics, which the County Society had thrown over and it was the evident intention of its promoters to supersede the older organization in its relations to the organic law of the Commonwealth. This effort having utterly failed, its doings were confined to the scientific work, which was commendable, and it has of late received a large accession to its membership, the majority we are told being members of both organizations. There being no need whatever for two societies of this class with similar aims, and since the president of the American Medical Association has stated that the code is not an issue in that organization, we presume the majority will decide that "in union there is strength" and there will be medical unity so far as these societies are concerned. If this object is accomplished it will end a feud which has been a great hindrance to professional progress, at least ethically, in both State and nation.

PRESENT ASPECT OF A SOCIAL PROBLEM.

THE approaching advent of a new administration of our city affairs makes it appropriate to consider the present aspect of the greatest social problem in all large communities—that, namely, which concerns the repression of sexual vice and the prophylaxis of venereal disease. In this connection, of course, the general question first comes up as to the expediency or otherwise of regulating prostitution by law. In the leading European countries this has been answered, more or less decidedly, in the negative. State regulation of vice, more especially in the army and navy, was tried in England for some 30 years, and was finally abolished in 1886. Recent statistics show a remarkable reduction in maladies caused by vice in England since the latter date. So strikingly evident is this result that it largely determined the failure of the Regulation system to obtain the support of the Brussels Conference of 1899, whose delegates included all the great Regulationists, as well as the most noted specialists.

In France, after 100 years of legal regulation, the stamping out of syphilis had been confidently hoped for, but the picture given by members of the Conference delegations from that country were very far from supporting such an expectation. On the whole, therefore, it may be regarded as settled that the toleration or quasi-authorization of vice, under the assumed safeguard of compulsory medical inspection of prostitutes, or their segregation in any one-quarter of the city, is opposed to the ethical sentiment of Anglo-Saxon communities, and is not to be attempted. But all public signs or advertisements of vicious resorts must be sternly forbidden—everything, in short, which can reveal their existence or act as a temptation to passersby in thoroughfares or visitors of resorts. Finally, and above all, we must rely on the effects of early moral training and scientific instruction on the all-important topics involved, for, in this direction, as in most

others, it is *ignorance* which is the principal if not the only source of real danger to society at large.

A SERUM FOR TYPHUS.

AMONG the most recent of the serums which have been prepared for diseases considered of special danger and very contagious is one by Dr. Chantmesse, one of the most eminent physicians in Paris, whose effect in the treatment of Typhus Fever has been so marked as to attract public attention. Of thirty-four typhus patients entrusted to his care and treated with this serum every one recovered, while in the other hospitals of Paris twenty-five per cent. of typhus patients submitted to the disease. To further test the efficacy of the remedy, injections with the serum were made on typhus patients of other hospitals with very favorable results. Of one hundred patients treated with the serum only six died and these only because the treatment had been applied too late.

The sanitary authorities of Paris from the marked success which has followed the use of the serum have ordered that injections of the Chantmesse serum be made in all hospitals at the first appearance of typhus symptoms. The city of Mexico, especially at the present time, now that the drainage of the valley is going on, are taking steps to use the serum in its war upon typhus, which is more prevalent there than in any other part of the world.

THE ROENTGEN RAY IN CANCER.

WITHIN the past twenty years quite a system of medicine has been developed from the study of the colored rays of the sun which combined, form white light. One color acts in a marked degree upon the nervous system. Another upon certain forms of eruptive trouble—each having a separate action upon certain conditions of organized matter. When it was found that the Roentgen rays passed through opaque substances—we realized only in a small degree the immense value it would be to the surgeon in the line of diagnosis of tumors, fractures, dislocations and foreign substances in the human system, giving no thought to the wonderful curative action which might be obtained from it in many severe forms of disease. But like every other great discovery, new powers have been revealed with added study and new experiments until now the X-ray has been found a curative agent of great value, as well as simply one of diagnosis.

Pulmonary consumption was one of the first diseases upon which its curative action was tried, but with no satisfactory result. Internal cancer was treated with the X-ray as early as 1896, but only in cases where the disease had reached an advanced stage and no good results followed. Effects, however, of a very favorable character were obtained in the treatment of eczema, lupus and other skin diseases. The curative action when directed upon lupus led to still further experiments upon that variety of cancer called epithelioma. Dr. Francis H. Williams of Boston, in a recent work upon the Roentgen rays, mentions several cases of improvements or complete cure in epithelioma, where the treatment was commenced in an early stage of the disease. The attention which is being given to this agent and the good results which we know have in many instances followed lead us to hope that continued investigation may define more exactly its field of action in the treatment of a disease for which only in the immediate past any effectual remedy has been found.

THE INCREASING FREQUENCY OF CANCER.

MORTALITY from cancer during the past year, exceeding the fatalities from all contagious diseases in New Jersey, has puzzled and startled the Board of Health of that State. The annual report of the Bureau of Statistics, submitted to the Governor, showed that of the 3,444 cases of diphtheria, 296 cases of scarlet fever and 944 cases of typhoid fever, there were only 613 deaths, while from cancer the deaths total 1,001. There were 225 cases of small pox in the State last year, and this malady resulted fatally in only five cases.

Altons Fell, of the Trenton Board of Health, thinks the fact may be attributable to the employment and consequent crowding of girls in factories; to the hereditary existence of cancer in some families and to the strange characteristic of the cancerous sore, in that it often visits a locality in a wave, continuing for several years, then mysteriously disappearing. The slightest injury to sensitive parts will, many times, cause a cancer to develop, especially when weak, unhealthy, and poorly nourished women, girls and boys are struck by machinery, and remain in the unwholesome, vitiated atmosphere of the factory. The danger is distressingly apparent. There is a possibility also of causing a cancerous growth in the mouth by the constant smoking of a pipe, the stem of which, becoming heated, becomes an irritant of the tongue and lips. There is nothing to warrant the assumption that mental depression exercises any influence in the causation of carcinoma, except through blood impoverishment, which almost invariably exists in melancholy (Steele), a change that appears not to influence the outcome in the male materially, as the percentage of affliction is substantially alike in this sex in all forms of insanity. The preponderance of malignant manifestations in the female should be attributed rather to the broader field of attack than to any form of special vulnerability.

Roswell Park and Gaylord declare that the mechanism of lymphatic enlargement has not yet been made clear, and that the diffusion of cancer along the nerve trunks is more frequent than is commonly supposed. That immediate contact is not necessary is shown by cancer of the lip and tongue. Cancerous elements when introduced into the serous fluids seem to find very unfavorable conditions for their development. Syphilitic lesions, or their resulting scars, and fistulous tracts, es-

pecially those leading inward from the skin, have often been the starting point of cancer. Scar tissue is particularly liable to undergo cancerous change, especially scars following extensive burns. Park does not believe in the heredity of cancer, although he believes in an hereditary transmission of a soil favorable to the growth of cancer.

THE MISSING LINK.

IT would be an interesting fact if the researches of the physician in the line of his profession should point to the kinship of man with the monkey, and even if what has been so eagerly searched for by scientists as the *"missing link,"* and supposed to have been discovered in Java, should never any further materialize, this one demonstrated truth would be sufficient to transform a theory to an established fact.

Transfusion of blood has been quite common during the past century, in certain cases of sickness, from a healthier person to an invalid, but when the blood of a healthy animal was substituted the attempt was a failure. In 1875, Landois, in his experiments of transfusing blood from one animal to another, found it was only possible to do so successfully between representatives of closely allied races. Friedenthal found that the serum of the eel dissolved the blood corpuscles of mammals, birds, reptiles, and certain kinds of fish; that of the shark dissolves the blood corpuscles of higher animals as well as the eel, and that of horses dissolves the corpuscles of rabbits, lambs, and men, but not that of the donkey. The blood serum of hogs has an injurious effect upon all other animals, while human serum dissolves the blood corpuscles of all cold-blooded animals, birds, and the above-mentioned mammals. In his experiments of the monkey and man, Friedenthal injected into the veins of a healthy, eleven-year-old chimpanzee the blood of a specially vigorous young man without producing the slightest degree of illness in the monkey, from which he forms the conclusion that the relationship between man and the monkey is very close.

EFFECT OF A MUSICAL NOTE UPON INSECTS.

THE strong attraction which the bright light of a lamp or candle has for a large variety of winged insects has been noted by every one. Sir Henry Maxim, in a letter to the *London Times*, gives an illustration of the strong attraction a musical note has for a variety of insects, especially mosquitoes. In an electric lamp a musical note proceeded from the box containing the dynamo machine under the lamp. One evening while examining the lamp he found that everything in the immediate vicinity was covered with small insects. They did not appear to be attempting to get into the globe, but into the box that was giving out the musical note. A close examination of these insects showed that they were all male mosquitoes. Although there were certainly two hundred times as many female mosquitoes on the ground as males, not a single female mosquito was found to have been attracted in the least by the sound. Sir Hiram Maxim remarks that "when the lamps were started in the beginning of the evening every male mosquito would at once turn in the direction of the lamp, and, as it were, face the music, and then fly off in the direction from which the sound proceeded. It then occurred to me that the two little feathers on the head of the male mosquito acted as ears, that they vibrated in unison with the music of the lamp, and as the pitch of the note was almost identical with the buzzing of the female mosquito the male took the music to be the buzzing of the female."

BRIQUETTES FROM GARBAGE.

ONE problem which municipal authorities of all countries have been seeking to solve is how to best dispose of the city's garbage. A process has been discovered in France by which garbage is converted into briquettes. It consists of mincing the refuse from abattoirs, fish markets, ets., straw, paper, and the like, and adding tar and naphthalene. The whole mass is then mixed in a kneading apparatus, dried, and pressed into briquettes. The director of the Paris Municipal Laboratory says:

"These briquettes have a slight odor of gas, burn brightly, and engender heat slowly. With a more highly perfectly method of manufacture, they will engender less ash, and the heat-producing qualities will be about the same as those of common coal. They will also possess the advantage of burning sowly and developing no smoke."

If this report is true, municipalities, instead of having to cremate their garbage—a method which can not be said to be entirely successful—will receive money therefor.

HORSE MEAT IN VIENNA.

THE comparatively high prices obtaining in Vienna for beef, mutton, and pork put these meats beyond the daily reach of the poorer classes, who are most taxed by hard labor and are obviously in need of strength-giving food. Nearly half a century ago, the experiment of putting horse meat on the market was made for the first time in Austria.

The price of horse meat ranges, per pound of fore quarter, from 5 to 8 cents; hind quarter, 6 to 9 cents; choice cuts for steak and roast, from 5 to 11 cents; the same cuts in beef averaging from 20 to 24 cents a pound. The horse meat is also worked up into sausages, and as such sells at correspondingly low prices. The horse-meat butcher shops, of which there are now no less than 185 in this city, present a clean and attractive appearance, and are in no way distinguishable from the shops where the usual kinds of meat are sold, save by the sign announcing their specialty. Restaurant keepers who serve horse meat must designate this fact in a special column on the bill of fare offered to patrons.

IS PROPHYLAXIS AGAINST TUBERCULOSIS PRACTICABLE?

BY this question we have no reference to prophylaxis on principles of general personal hygiene. That tuberculosis is resisted by those of sound physical strength has long been known, and one could scarcely find an antagonist to such claim. By prophylaxis, therefore, we allude to attempts aimed at the bacilli of tuberculosis and at all possible means of distribution of these germs. There are two points in regard to which there is serious difference of opinion and which are of the greatest importance. One of these is the danger or safety of the presence of consumptives in dwellings, hospital wards, sleeping cars, etc.; the other refers to the advisability or inadvisability of the employment of consumptives in the minor forms of agriculture, such as berry and grape picking, market gardening, etc. Both these points of dispute are essentially one, so far as pathology and prophylaxis are concerned, in that they both depend upon the relative danger of the consumptive to society while they are also sociologically closely related, since the decision affects the comfort and welfare of the consumptive, as regards the continuance or deprivation of human society and of an occupation ideal for the consumptive who must work or sacrifice his independence. In the latter particular it must also be borne in mind that State care for the consumptive is greatly facilitated or retarded according to the decision reached.

When the germ theory was new there was a disposition to do away with the distinction between contagion and infection, and to minimize or deny the existence of etiologic factors not directly connected with the bacterium. We now know that our predecessors of antebacterial days were by no means lacking in wisdom and that the identification of a germ is not the whole story of the installation of a disease. For instance, pneumonia, though demonstrated to be the result of a bacterial invasion, is essentially—in the practical sense—a disease of disturbed circulation in the lungs, predisposed to by certain senile conditions and by inclement weather. The mere presence of the germ, without these circumstances, rarely produces disease, and it seems to make little difference whether the pneumococci are present in large numbers or whether they are encountered in their scanty distribution in the atmosphere. Cancer, if shown to be of bacterial or protozoan origin, will remain, for practical purposes, a disease of senility and of other conditions favoring an excessive growth of epithelium. The various septic processes due to the colon bacillus are still more strictly dependent upon other factors than the mere presence of bacteria.

There are at present three views held as to the contagiousness of tuberculosis: First, the extreme view that the tubercle bacillus is a sort of scavenger, producing disease only in those physically and mentally unworthy to live, that precautions against infection are unnecessary because one part of the community is practically immune, even if exposed to the bacilli in great numbers and virulence, while the other part is doomed to the disease, at one time or another, because it is impossible to avoid their encounter, in some force, at some time; second, the equally extreme view that tuberculosis—of course, with an external discharge of bacilli—is as truly contagious, though less generally and less conspicuously than diphtheria, and that, as a logical conclusion, prophylaxis must depend on isolation, concerted effort at disinfection of sputum and other discharges and that treatment should depend, so far as practicable, on the disinfection of the foci of disease and the prevention of self-inoculation; third, the middle view, largely held by those who regard tuberculosis from the clinical standpoint and who are identified with the sanitarium treatment of the disease, that while tuberculosis is decidedly infectious, it is not markedly contagious, that the cleanly consumptive is not a source of practical danger, either as an inmate of a home or institution, or as a handler of food products; that destruction of bacilli, except in sputum or other discharges, is impracticable and that prophylaxis and treatment must be based on an upbuilding of the resistive powers of the organism, not on a diminution of infectious material.

A decision among these views is highly desirable. If tuberculosis can be rooted out or materially diminished by quarantining against the victim of the disease, and by concerted efforts at destruction of tubercle bacilli, this course is the proper one, whatever the trouble and expense to the community and whatever the discomfort and mental suffering entailed on the victims of the disease. If a seventh or eighth of the population must continue to succumb to this disease, we want to know the sad truth. If, as in the case of antiseptic surgery, some meausure of precaution is necessary, but no attention need be paid to scattering germs of no marked virulence, that is also a matter of practical importance. Obviously, the three views which we have mentioned do not represent all possible beliefs. Indeed, a very conservative man may hold one of the extreme views while the middle one is capable of arousing radical expressions. Then, too, while the extreme views are likely to occur to theorists, they are free from the suspicion of interested motives, and they cannot be characterized as following the line of least resistance.

Before accepting the view that the tubercle bacillus is merely a scavenger, the existence of a tubercular diathesis must be more firmly established. It is certainly nonsense to connect tuberculosis with complexion, and the typic description of the tubercular diathesis includes some points that are actually the results of the disease in its incipient stage. We have personally not the least hesitation in opposing the

view that the tubercle bacillus is a scavenger. Indeed, several series of necropsy reports have definitely shown that from fifty to almost a hundred per cent. of persons dying of other diseases or by accident present healed tubercular lesions. It would be absurd to argue that a germ which attacks so large a proportion of the race and which actually kills a sixth or a seventh is a scavenger, playing a wholesome rôle in society. Between the other two views, the essential difference is as to the relative values of the predisposing causes on the one hand and of the bacillus on the other. There is no dispute that both factors are necessary, but there is practically a wide divergence of opinion as to whether efforts should be directed toward getting rid of the bacillus or toward strengthening the patient. Nearly every one recognizes the importance of the latter, though in a different degree—some regard the former as hopeless, some as useless, others as practical in large measure

"URIC ACID FALLACIES."

THE absurd and antiquated theories (as he considers them) so widely entertained to-day, both among practitioners and laymen, concerning the effects of uric acid, are examined by Dr. Frank Billings, in an address before the Illinois State Medical Society (American Medicine, October 12, 1901). Practitioners, he says, ascribe to uric acid all sorts of diseases, morbid changes and symptoms. These conditions are attributed to the effects of uric acid as a poison. Among the laity it is the almost universal belief that a joint pain, myalgia, neuritis, neuralgia, etc., are due to uric acid. Unhappily that part of the medical profession who still believe in the uric-acid theories of bygone years teach and foster the belief in the laymen.

The writer comments as follows upon the teachings of Alexander Haig in his recent work upon this subject: "Dr. Haig claims that uric acid has two sources: (1) That which is formed in the body from the nitrogenous food; (2) the uric acid which is introduced ready formed into the body in certain articles of diet. He considers that flesh diet increases both the introduction and the formation of uric acid. His views of the formation and of the methods of increase of uric acid in the body are opposed to scientific facts. His methods of estimating the presence of uric acid in food and in the fluids of the body are faulty. His views are mentioned only because his book on uric acid has found a wide sale in the United States and his views are often accepted and quoted by practitioners and writers.

"Haig advances the theory that normally there is a constant normal ratio of 1 to 33 between uric acid and urea. If the uric acid excretion falls below this ratio it means the retention in the body of uric acid, either in solution in the blood or deposited in the joints or the tissues of organs. On the other hand, an increase in the ratio of uric acid to urea means the washing out of the deposited uric acid. No other observer has been able to corroborate Haig's claim of a constant normal uric-acid ratio or that any deviation from this is an abnormal condition. Competent observers agree that the ratio of uric acid to urea is, on the average, about 1 to 45, and that deviation from this ratio may be produced by alteration in diet without affecting the general health."

In conclusion, the leading "fallacies of uric acid" are summarized as follows:

1. That uric acid is toxic.
2. That it is a causative factor in any disease except gout.
3. That "uricacidemia," meaning acid blood, exists.
4. That the chemical reaction of the blood may be altered by the use of medicinal quantities of the alkalies or by diet.
5. That uratic deposits may be dissolved out by the administration of alkalies.
6. That lithia is a uric acid solvent of unusual potency.
7. That uric acid is an abnormal constituent of the urine.
8. That an excess of uric acid in the urine at one time or a deficiency at another time indicates an abnormal condition in reference to uric acid.
9. That rheumatism is due to uric acid.

THE BACTERIA OF THE DISSECTING ROOM.

MANY well-known surgeons, especially those who do abdominal work, have a standing request that no student who is doing dissection will attend their clinics. The precaution is a wise one, although it seems foolishly extreme to many of the men in question. Their mere presence is regarded as a possible source of contamination. It is well known that medical students and even practitioners doing autopsies have left a trail of sepsis behind them, despite the most rigid care and systematic disinfection. Gildersleeve, in a recent issue of the *University of Pennsylvania Medical Bulletin*, gives an interesting report on his bacteriological investigations of the dissecting room. He examined twenty-four cadavers, twenty of whom were embalmed by means of intravascular injections of carbolic acid, creosote, arsenic, glycerine and alcohol. The other four were injected with the ordinary solution of zinc chloride, after which they were kept in sodium chloride vats. He found in the oral and nasal cavities a variety of bacteria as follows:

Micrococcus candicans, 1; micrococcus roseus, 1; staphylococcus pyogenes aureus, 1; staphylococcus pyogenes albus, 1; bacillus mycoides, 3; bacillus multistriatus, 1; bacillus pseudodiphtheria, 2; bacillus subtilis, 2; yeasts, 2, and in two subjects, 3 bacilli of the colon group. On the surface of the skin he also was able to gather another crop, as follows: Bacillus subtilis, 2; bacillus megatherium, 2; staphylococcus epidermis albus, 3; staphylococcus pyogenes albus, 1.

In the lungs of those who died of pulmonary tuberculosis, virulent tubercle bacilli were found, although

they had been in cold storage for months. From the intestines he recovered another active set as follows: Bacillus mesentericus vulgatus, 2; bacillus ramosus, 2; bacillus mycoides, 1; bacillus subtilis, 1; bacillus putrificus coli, 1; bacilli of colon type, 2; B. cloacæ, 1; staphylococcus pyogenes citreus, 1; micrococcus aërogenes, 2; micrococcus cumulatus tenuis, 1; yeasts, 4. The remaining two had been in the sodium chloride vats for four and six months. The bacteria found in them were: Bacillus mesentericus vulgatus, 2; bacillus coli communis, 1; bacillus cuticularis, 1, and yeasts, 2.

So on through all the muscles and organs he found the bodies filled with pathogenic germs. He comments on the finding of so many living infective organisms so long after death in bodies which had been properly embalmed. It shows the importance of treating these possible sources of contamination with respect not only on the dissecting table but in the handling of the dead who may not immediately be put out of harm's way.

A CONFLICT OF EVIDENCE.

UNDER the title, "Recollections of the First Operation Performed Under Anesthesia," the *International Journal of Surgery* for August contains an article which, if it be not a mere forgery or a tissue of deliberate falsehoods, affords another example of how widely competent witnesses may disagree in their reports of the same public occurrence. The story purports to be communicated by G. M. Angell, M.D., in a letter to Prof. J. P. Webster, of Chicago, and relates to the famous operation by Dr. John Collins Warren, at the Massachusetts General Hospital. The writer states that this took place "in the winter of 1846 or '47, while he was attending his last course of lectures in the medical department of Harvard University." The date, of course, is incorrect. His companion and himself having entered the amphitheatre, "took their seats close to the railing of the stage and directly opposite the operating table. Presently Dr. Warren, Sr., came in, and soon after a young man, having in his hands a glass globe," etc. This was Morton, who is spoken of as "a gentleman," unknown to nearly all present, although he was then a Boston dentist in large practice, and a fellow-student of the writer. Nothing is said of his coming in behind time, so that Warren, after a contemptuous remark, was on the point of commencing the operation without him. Next, the patient to be operated upon was brought in, "a young woman about 24 or 25 years of age," and was laid upon the table. Dr. Warren then spoke, referring to the disease, "necrosis of the knee-joint," and said the limb must be sacrificed. All other published accounts, so far as we know, agree in saying that the subject was a young *man*—his name, address and occupation are on record—or supposed to be—and that the procedure was *not* amputation. Morton was then introduced, and administered the ether. The writer says: "I was not more than six feet from the patient and could see every motion. The silence was broken by Morton taking the mouthpiece from the patient's mouth. He said in a loud voice to Warren: 'She is ready for the operation, sir.' Dr. Warren replied very gently, at the same time searching for a pin on the lapel of his coat, 'You think she'll not feel any pain now, do you?' Mr. Morton said, 'No, sir.' Warren had found a pin, took up the arm of the patient, and forced the pin into it, at the same time looking at her countenance. He repeated this two or three times. She did not change the muscles of her face. He then quickly picked up a catling and made a rapid incision through the integuments and superficial layer of the muscles. The operation was circular, and at the lower third of the thigh.

"He stopped an instant and looked earnestly into her face. She showed no sign of pain; not a muscle moved. He finished the division of the muscles. sawed off the bone, put the leg under the table in front of him. He stepped aside, crossed his arms behind him, and said, 'John, tie those arteries;' sponged off the stump, put in, as customary in those days, three stitches, and began putting on the straps. All this time the old gentleman was travelling back and forth across the stage, and as he passed by he would look down into the patient's face. Just then she turned her head a little and gave a groan, like one coming out of her sleep.

"The old gentleman took hold of her sleeve and called her name. She looked up at him in a dazed manner, and said, 'Sir?' 'I guess you've been asleep, Jane,' he said. 'I think I have, sir,' she replied. 'Well, we brought you here for the purpose of performing the operation on your limb.' 'Yes, sir,' she replied. 'Well, are you ready for the operation?' 'Yes, sir,' she said; 'I am ready.' He reached down, picked up the limb, showed it to her, and said, 'It is all done.'

"I have no ability to describe the scene—the scene which followed. When the audience was still, the old gentleman turned around, and, facing them, said, 'We have seen what we have seen. At some future time I may have something to say about it, but to-day, nothing.' The audience dispersed—and the greatest discovery of the nineteenth century was an accomplished fact."

This, it must be admitted, reads like a genuine narrative—the more so for being artlessly told—but if it is accurate, then all the other contemporary or reminiscent accounts of this memorable scene are erroneous in several particulars, as to which it would seem impossible that any eye-witness could be mistaken.

According to Angell, Warren, when the all-important demonstration was over, instead of uttering that emphatic comment which has become historical, "Gentlemen, this is no humbug," simply had "Nothing to say!"

It may be objected that, the momentous result having been at once fully accomplished, minor details are hardly worth contending about. Still, as the whole story must go down to posterity, it is desirable to have it in authentic shape. What says the editor of the *Interna-*

tional Journal of Surgery? Will he vouch for "G. M. Angell;" or cannot the latter, if still in the land of the living, be induced to come forward and establish, if possible, the truthfulness of his picturesque relation?

THE official report of the Camden, N. J., Board of Health shows conclusively that tetanus was not caused by the vaccine virus employed. A case of tetanus occurred from gunshot wound, during the same period, in a boy who had not been vaccinated, proving that the tetanus germs were in the atmosphere. There is indisputable evidence that the tetanus germs were not introduced at the time of vaccination.

The tetanus cases are to be explained upon atmospheric and telluric conditions which have prevailed in Camden during the past six weeks. There has been a long period of dry weather with high winds, so that tetanus germs, which have their normal habitat in the earth dust, dirt of stables, etc., have been constantly distributed in the atmosphere. It is noticeable in all the cases, after careful examination as to the cause, that the wound had been exposed by the scab being knocked off or removed, or else the arm had been injured and infection resulted; frequently children scratched the vaccinated area with their dirty fingers and nails and infected the wound.

We are glad to see that the report thoroughly exonerates vaccination as a cause of this terrible calamity.

DR. T. GAILLARD THOMAS celebrated his seventieth birthday recently, and some of his professional brethren invited him to dine with them at Sherry's on the occasion, as a mark of appreciation of his services in the profession, and to show their esteem for his splendid personality.

Dr. Thomas in his address gave "A Retrospect of Progress During the Past Half Century," and in doing so said: "As I look I see dimly, like giants enveloped in a mist, the great physicians of the past—the tall, fine figure of the great Valentine Mott, with his classic features and beautiful face; the learned and eccentric John W. Francis; the courteous Delafield and the erratic Martyn Paine," and then he went on to speak of the younger men, including the striking and attractive John Murray Carnochan, all of which are now gone.

Dr. Thomas in his interesting remarks made a strong plea for the establishment of a Secretary of Hygiene in the Cabinet of the President of the United States, whose function it shall be to avail his country of all that concerns the public health.

Dr. Thomas has reason to feel proud of the company which greeted him on this occasion, and the kind words which have been said of him.

The TIMES desires to extend its cordial congratulations and best wishes, even if a little late in the doing.

The Saturday Evening Post, of Philadelphia, announces two new departments which will challenge the interest of young men and women throughout the country. "A Home College Course," as one of them is called, has been designed to meet the wants of ambitious young people who have not had the advantages of a university training. This course will be conducted by a special faculty, composed of professors in the leading colleges. The studies have been most carefully chosen. Each will be treated in an interesting way, and helpful hints for outside reading freely given.

"To the Young Man Beginning Business" is the second of these new departments. In it the most successful men in a dozen occupations will write about what helped them to the front in their own business, and give a list of books and magazines bearing upon it. Their purpose will be to tell the beginner how he can make himself more valuable to his employers.

These new departments will begin early in January, and will be made a permanent feature of *The Saturday Evening Post.*

A fourth series of clinical lectures on diseases of the skin, by Dr. L. Duncan Bulkley, is announced to be given at the Skin and Cancer Hospital, Second avenue and Nineteenth street, on Wednesday, at 4.15 P. M. Members of the profession invited to attend. Free.

BIBLIOGRAPHICAL.

A TREATISE ON SURGERY. By American Authors. For Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, N. Y.; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; ex-President Medical Society of the State of New York; Surgeon to the Buffalo General Hospital, etc. Third Edition; Enlarged and Thoroughly Revised. With 692 engravings and 64 full-page plates, in colors and monochrome. New York and Philadelphia: Lea Brothers & Co., 1901. Pp. 1408. Octavo.

The editors and publishers of this superb work may congratulate themselves upon the promptness with which a third edition has been called for, making the present revision possible in so short a time.

The approval by the profession of the essentially new and original method of treating certain topics followed in the previous edition, such as the distinction between Hyperæmia and Inflammation, the insistence upon the practical importance of Bacteriology, and the development of the subjects of Auto-intoxication, the Surgical Sequelæ of Acute Non-Surgical Diseases and the Surgical Pathology of the Blood, have encouraged the editors in a further presentation of the latest advances in these rapidly developing lines.

While keeping abreast of the times in modern research, the accumulated experience of the past has not been neglected, but an effort has been made to afford under each topic a complete and condensed statement of theory and practice representing the science and art of surgery in its present advanced position. A new chapter has been added on the subject of Blood Examination Applied to Surgery. The illustrations have been carefully enriched and the colored plates nearly doubled.

The book shows an earnest desire, both by text and illustration, to be helpful to both student and practitioner.

Of the physical part of the work, we may say that it is a most perfect specimen of the art of book-making, of which the publisher may well feel proud.

THE DIAGNOSIS OF NERVOUS AND MENTAL DISEASES. By Howell T. Pershing, M.Sc., M.D., Professor of Nervous and Mental Diseases in the University of Denver; Neurologist to St. Luke's Hospital; Consultant in Nervous and Mental Diseases to the Arapahoe County Hospital; Member of the American Neurological Association. Illustrated. 12 mo. P. Blakiston's Son & Co., Philadelphia, 1901. Price, in cloth, $1.25 net.

The object of this little book is to enable the general practitioner to diagnosticate the diseases of which it treats. The scheme embraces a series of diagnostic tables under such general heads as Hemiplegia, Paralysis of the Ocular Muscles, Optic Neuritis, Headache, etc., adopting the form of a botanical key.

The tables are preceded by a description of the methods of examination and a brief discussion of the signs of various diseases which lead up to their use. The general practitioner will find this book of great service in differential diagnosis.

THE SURGICAL TREATMENT OF DISFIGUREMENTS AND DEFORMITIES OF THE FACE. By John B. Roberts, A.M., M.D., Professor of Surgery in the Philadelphia Polyclinic; Surgeon to the Methodist Hospital. Second Edition, with a chapter on the Reconstruction of Syphilitic Noses. Illustrated with 62 figures. Philadelphia: The Philadelphia Medical Publishing Co., 1901.

Dr. Roberts, by his efforts, has widened the interest and the operative field of an important subject. To be able to remove a disfigurement of the face successfully is an art to be cultivated, and should be appreciated.

"MEMORIA IN ÆTERNA."

As time flies by, amid the rush and bustle of this eminently practical work-a-day world, one unconsciously displaces from the mind of to-day the remembrance of the happenings of yesterday; there are, however, some things which should remain "in everlasting remembrance." The gentleness, strength and beauty of the personal character of William McKinley, and the inestimable value of his services to the Nation and the world at large, should not be consigned to the mental dust heap of oblivion, but should be cherished as a precious heritage by every patriotic American, whether native or foreign-born. Feeling confident that their friends in the medical profession will appreciate at its proper worth a souvenir which shall serve as a constant reminder of the life, character and services of our third martyr President, the Arlington Chemical Company has prepared for gratuitous distribution a magnificent enlarged reproduction (17x13) of one of the finest and most faithful portraits in existence. Competent critics who have seen this reproduction have expressed themselves as surprised at the faithfulness with which the beautiful Rembrandt effect has been carried out, with its rich, dark sepia tints, and with the general artistic worthiness of the portrait as a whole. The advertisement of Liquid Peptonoids is so unobtrusive as to be entirely unobjectionable. The Arlington Chemical Company, Yonkers, N. Y., will be pleased to send a copy to any physician who may have failed to receive one, together with suggestions for proper method of framing.

PRACTICE OF MEDICINE. By Eminent Medical Specialists and Authorities. Edited by George Alexander Gibson, M.D., D.Sc., F.R.C.P. Ed., Physician to the Royal Infirmary, Edinburgh. In two volumes. Philadelphia: J. B. Lippincott Company, 1901. Pp. 824 and 907. Octavo.

It is evident from the preface of this classic work that the older country is not flooded with text-books of this class, as our own is, or there would not be "a want for a work reflecting modern English teaching." We do not mean to infer that we have too many, or that we have any that are not excellent. On the contrary, they all find a place and reflect modern English teaching.

Notwithstanding the number of American books on the practice of medicine, there is certainly room, even in this country, for a work by such eminent medical specialists and authorities as we find in the one before us. The text opens with a preliminary discussion of general etiological and pathological problems, which pave the way to the more practical portion of the work which follows.

The subjects are concisely and clearly stated in the best of English and in an attractive style, which makes reading easy.

In a word, we may say that it is a work of the highest order, and worthy a place in any library.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Fifth Edition, Thoroughly Revised. One handsome octavo volume of 1297 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, $5.50 net.

The success of this work as a text-book and as a practical guide for physicians has been truly phenomenal. Five large editions have been called for in less than four years. The rapid exhaustion of each edition has made it possible to keep the book absolutely abreast of the times, so that it has become justly celebrated as a thoroughly up-to-date work on the practice of medicine.

In this edition the most thorough and extensive changes have been made in connection with the large group of Infectious Diseases. No pains have been spared to present modern views, derived from clinical experience and critical bedside observation, as well as newly-discovered scientific facts. Especial care has been bestowed upon the etiology, including bacteriology, inductive diagnosis, and the details of treatment, in the belief that these phases of the subjects treated form the ground-work for an intelligent and successful pursuit of the science and art of medicine.

The etiology and mode of transmission of Malaria and of Yellow Fever have been almost entirely rewritten. Certain affections of growing importance, as Diphtheritic Dysentery and Parasitic Hemoptysis, have been recast and more fully discussed. A few new articles have been introduced; for example, Fatty Infiltration of the Heart, Streptococcus Pneumonia, and Acute Diffuse Interstitial Nephritis. Among leading infections that have received careful and thorough revision are Typhoid Fever, Malaria, Cerebro-Spinal Meningitis, Lobar, Pneumonia, Influenza, Variola, Chronic Tuberculosis and Hydrophobia. The entire work, moreover, has been carefully scrutinized and brought into harmony with the most recent developments in practical medicine.

Again we take great pleasure in commending this

book to our readers as one with which they will feel satisfied.

TYPHOID AND TYPHUS FEVER. By Dr. H. Curschmann, of Leipzig. Edited, with additions, by William Osler, M.D., Professor of the Principles and Practice of Medicine, Johns Hopkins University. Handsome ovtavo of 646 pages, illustrated, including a number of valuable temperature charts and two full-page colored plates. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, $5.00 net; Sheep or Half Morocco, $6.00 net.

The original German edition of this volume is universally recognized as the standard authority on the subjects of which it treats. The American edition, however, surpasses the German, for, besides containing all the material of the original, extensive additions have been made to almost every chapter, thus incorporating into the work the latest views on the subjects under discussion.

The chapter on Bacteriology has been thoroughly revised and much new material added, giving prominent consideration to the distribution to the typhoid bacilli, especially in the urine, the rose spots, and the blood.

To the chapter on Pathology many minor additions have been made, incorporating the important work of Mallory. The literature on the localized lesions due to the bacillus has been carefully reviewed and made to conform to the most recent advances in that part of the subject. Thayer's exhaustive study of the state of the blood has been utilized, and the Surgical Aspects of Typhoid Fever have been fullly revised with the aid of Keen's monograph.

Much valuable material has been added to the chapter on Diagnosis by Bacteriologic Methods, particularly with reference to the recent work in blood-cultures and on the detection of bacilli in the urine.

The chapter of Perforation and Peritonitis has been practically rewritten, as has also the section on the Hepatic Complications of Typhoid.

Thus it will be seen that the American edition of this valuable work, while still possessing all the commendable qualities of the original German, is greatly enhanced in its field of usefulness by being brought strictly abreast of the latest literature on the subjects, and by representative specialists.

Wright's method of antityphoid vaccination has also been added.

This work constitutes a most useful addition to the literature of an important subject. The physical part of the work is in Mr. Saunders's faultless style.

AN AMERICAN TEXT-BOOK OF PATHOLOGY. Edited by Ludvig Hektoen, M.D., Professor of Pathology, Rush Medical College, Chicago; and David Reisman, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic. Handsome imperial octavo of 1245 pages, 443 illustrations, 66 of them in colors. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, $7.50; Sheep or Half Morocco, $8.50 net.

The importance of the part taken by the science of pathology in the recent wonderful advances in practical medicine is now generally recognized. It is universally conceded that he who would be a good diagnostician and therapist must understand disease—must know pathology. The present work is the most representative treatise on the subject that has appeared in English. It furnishes practitioners and students with a comprehensive text-book on the essential principles and facts in General Pathology and Pathologic Anatomy, with especial emphasis on the relations of the latter to practical medicine. Each section is treated by a specialist who is thoroughly familiar with his particular subject, and can best frame the theories and conclusions in an authoritative form. The illustrations, which are nearly all original, and of which 66 are in colors, are unsurpassed in beauty by those in any similar work in the English language. In fact, the pictorial feature of the work forms a complete atlas of pathologic anatomy and histology.

The editors have succeeded in making the work a worthy exponent of the great subject of which it treats. The publisher should be congratulated upon his ability to perform his part so well.

DISEASES OF THE INTESTINES. Their Special Pathology, Diagnosis and Treatment. With Sections on Anatomy and Physiology, Microscopic and Chemic Examination of the Intestinal Contents, Secretions, Feces, and Urine. Intestinal Bacteria and Parasites; Surgery of the Intestines; Dietetics; Diseases of the Rectum, etc. By John C. Hemmeter, M.D., Philos.D., Professor in the Medical Department of the University of Maryland; Consultant to the University and Director of the Clinical Laboratory, etc. In two volumes. Volume I.—Anatomy, Physiology, Intestinal Bacteria, Methods of Diagnosis, Therapy and Materia Medica of Intestinal Diseases, Diarrhea, Constipation, Enteralgia and Enterodynia, Meteorism, Dystrypsia, Enteritis, Colitis, Dysentery, Intestinal Ulcers, Intestinal Neoplasms, etc. With many Original Illustrations, some of which are in colors. P. Blakiston's Son & Co., Philadelphia, 1901. Large octavo, 740 pages. Price, $5.00 per volume.

The author says that when his work was begun there was no complete treatise on diseases of the intestines in this country, and he gives many good reasons why such a work is justified. A number of entirely original methods of diagnosis, chemic researches, and histologic studies of certain intestinal diseases are here fullly set forth for the first time, and due justice is attempted to be given to English-speaking clinicians in this department, of which there are several striking examples. It is an effort to enable the general practitioner to instruct himself in the most approved and modern methods of diagnosis and treatment of the diseases of which it treats.

The author has had the assistance of several other able specialists, so that his work may be considered most complete and exhaustive of the subject.

The physical part of the work is all that could be desired.

THORNTON'S DOSE-BOOK AND PRESCRIPTION WRITING.

DOSE-BOOK AND MANUAL OF PRESCRIPTION-WRITING: With a List of the Official Drugs and Preparations, and the more important Newer Remedies. By. E. Q. Thornton, M.D., Demonstrator of Therapeutics, Jefferson Medical College, Philadelphia. Second edition, revised and enlarged. Octavo, 362 pages, illustrated. Philadelphia and London: W. B. Saunders & Co., 1901. Bound in flexible leather, $2.00 net.

Invaluable not only to the student, but general practitioner as a work of reference. In the revision additions have been made to the chapters on "Prescription-

Writing" and "Incompatibilities," and references have been introduced in the text to the newer curative sera, organic extracts, synthetic compounds, and vegetable drugs. To the appendix, chapters upon Synonyms and Poisons and their antidotes have been added.

VECKI'S SEXUAL IMPOTENCE.

THE PATHOLOGY AND TREATMENT OF SEXUAL IMPOTENCE. By Victor G. Vecki, M.D. Third edition, revised and enlarged. 12mo, 329 pages. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, $2.00 net.

The whole subject of sexual impotence and its treatment is discussed by the author in an exhaustive and thoroughly scientific manner. This volume will come to many as a revelation of possibilities of therapeutics in this important field.

PENROSE'S DISEASES OF WOMEN.

A TEXT-BOOK OF DISEASES OF WOMEN. By Charles B. Penrose, M.D., Ph.D., formerly Professor of Gynecology in the University of Pennsylvania. Fourth edition, revised. Octavo volume of 539 pages, handsomely illustrated. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, $3.75 net.

Regularly every year a new edition of this excellent text-book is called for. The author presents the best teaching of modern gynecology, untrammelled by antiquated ideas and methods. In any case the most modern and progressive technique is adopted and the main points are made clear by excellent illustrations. In its revised form the volume continues to be an admirable exposition of the present status of gynecological practice in this country.

DORLAND'S AMERICAN ILLUSTRATED DICTIONARY.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. For Practitioners and Students. A Complete Dictionary of the Terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the kindred branches, including much collateral information of an encyclopedic character, together with new and elaborate tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Micrococci, Streptococci; Eponymic Tables of Diseases, Operation, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc., etc. By. W. A. Newman Dorland, A.M., M.D., Editor of the "American Pocket Medical Dictionary." Second edition, revised. Handsome large octavo, nearly 800 pages, bound in full flexible leather. Philadelphia and London: W. B. Saunders & Co., 1901. Price $4.50 net.

The first edition of this work issued in October, 1900, was exhausted in eight months. The cause of the great popularity is shown in the title page and the fact that the work represents as fully as possible the live literature of the medical sciences, by keeping it in all respects up to date. We notice with special commendation not only the complete and satisfactory definitions, but the etymological references in the original languages and the clear method of indicating the pronunciation.

THE PRACTICE OF OBSTETRICS BY AMERICAN AUTHORS. Edited by Charles Jewett, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital. Second edition, revised and enlarged, illustrated with 445 engravings, 48 of which are in colors and 36 colored plates. Lea Brothers & Co., 1901.

As a specimen of book-making in typography and illustrations the work is as near perfection as is possible to be obtained by mechanical skill. The subject matter from the pens of nineteen of our most accomplished obstetricians give us the latest and best teaching in this department of our profession. We notice in this edition important alterations have been made in the pathology of pregnancy and obstetric surgery to conform to recent developments, illustrated by new and original plates in colors and in black and white. The book is divided into eight parts: first, Anatomy; second, Physiology of Pregnancy; third, of Labor; fourth, of Puerperium; fifth, Pathology of Pregnancy; sixth, of Labor; seventh, Pathology of the Puerperium and obstetric surgery.

A TEXT-BOOK OF PHARMACOLOGY AND SOME ALLIED SCIENCES: THERAPEUTICS, MATERIA MEDICA, PHARMACY, PRESCRIPTION-WRITING, TOXICOLOGY, ETC. By Tobald Sollman, M.D. Illustrated. W. B. Saunders & Co., 1901.

The physiological and dual action of drugs have been studied along those scientific lines first introduced by Hahnemann in his animal experimentation, which are analogous to those upon which the modern science of physiology is built. By replacing accidental observation by well directed research our knowledge has been placed on a footing of exactness without which the application of drugs to the treatment of disease could only be empirical. In pharmacology all the numerous drugs are arranged in few groups. These groups are arranged in such order that their action can almost be foretold from their relations. The author has attempted and, in a great measure, succeeded to give all of the important pharmacologic facts. To facilitate their understanding and memorizing, they have been arranged in a systematic and logical manner, and the detailed account of the actions has been prefaced by a very brief summary.

A section on laboratory work gives a few simple experiments with suggestions by which they can be made much more extensive. To each group is attached a short section treating of its therapeutic application. Unofficial preparations in common use or possessing advantageous features have been freely introduced.

INTERNATIONAL CLINICS.

The third volume and eleventh series of these valuable clinics, which are published quarterly by J. B. Lippincott & Co., is full of exceedingly valuable original articles in the various departments of Therapeutics, Medicine, Neurology, Surgery, and Diseases of the Eye, Ear and Throat, together with a clear but concise article by Dr. Camac, on "The Clinical Laboratory in Private Practice and in the Physician's Office."

These monographs by some of the best writers in the medical profession, amply illustrated, brings the physician in close touch with the advances so rapid at the present day in the various fields of medical science.

PRACTICAL MEDICINE. By F. Mortimer Lawrence, A.M., M.D., Assistant in Practice of Medicine, Hahnemann Medical College. Boericke & Tafel, 1901.

This book is intended especially for students, but will be a valuable addition to the library of the active physician, the fundamental facts which are requisite to successful practice being clearly and concisely presented. Pathological processes rather than the details

of morbid anatomy have been described with the object of co-relating the symptoms of disease to the underlying changes. In connection with diagnosis the more important laboratory methods have been included; and in addition each section is preceded by a brief résumé of the essential points to be ascertained by interrogation of the patient, and of the physical methods by which the examination should be completed.

THE WISDOM OF PASSION, OR THE MOTIVES OF HUMAN NATURE. Being an entirely new view of the human passions. By Salvarona. Boston: Mystic River Book Co., Publishers, 1901.

Those who are familiar with the teachings of Hume and Spinoza will recognize the same line of thought in this beautiful volume upon the passional elements of human nature. We say the same line of thought, but of wider extent, and the subject handled with greater clearness and force. The argument designating man as a creative spiritual being, and the soul itself as the maker of its own environments and destiny, is strictly logical and supported by forcible illustrations. The argument shows that our ideas have their origin in the passions of the race, and that the author has been a careful student of practical psychology. The argument for personal immortality is so clearly stated, with such logical force, as to be irresistible. A thoroughly practical definition of the soul is given from a psychological standpoint. We should be glad to see this little work in the hands of every thoughtful person, to whom alone its scientific and practical deductions would appeal.

CORRESPONDENCE.

"ELECTIVE AFFINITY."

To the Editors of the MEDICAL TIMES:

In the latest issue of the *New England Medical Gazette*, the editor utters a note of solemn warning respecting "the present attitude of indifference of the old school" towards homeopathy, which he regards as involving "a most subtle and cunning danger" to the existence of "our school therapeutics." The condition of homeopathy in this country he believes to be the same as it is on the continent of Europe—*i. e.*, although the practice of the system is increasing, the number of its avowed practitioners does not increase in the same ratio. "This state of affairs," he says, "will continue to exist so long as *practical* homeopathy is taught by the dominant school, whereby the student may learn to cure his patient *tuto, cito et jucunde*, and still possess himself of whatever prestige there may be in belonging to a dominant school." As convincing evidence that practical homeopathy is really taught by the old school, he cites "a most interesting article in '*The* (*sic*) *American Medicine*,' for June 1, 1901, entitled 'Simplicity in Therapeutics,' by Edwin W. Pyle, M.D." Here it is told how the various drugs have each an affinity for some particular organ or system of the body, so that, as the author would explain it, "when a special part or organ becomes inflamed or disturbed in function, the physiologically selected medicine acts as a stimulant to restore balance of forces, without interfering with the essential *vis medicatrix naturæ*, when given in small and frequently repeated doses, but irritates, congests, or paralyzes recuperative power, when given in *large* doses at *long* intervals." After having shown that this is true as regards a long list of remedies, including those most frequently used by homeopaths, Dr. Pyle is quoted as saying, in conclusion: "The single remedy, hygienically given, in whatever dose, not only simplifies prescribing, but is scientifically correct."

His presentment thus completed, "Does anybody know of any better homeopathy than this?" inquires the editor of the *New England Medical Gazette*. The imminent peril to sectarian interests which he apprehends so keenly, is to be discerned, he thinks, in Dr. Pyle's choosing to set forth the foregoing "interesting facts" under the title of "Elective Affinity," instead of the name invented for them by Hahnemann, and in the uniform ignoring of this name by the dominant school in its therapeutic teachings. He fully and frankly admits that the teachings themselves are all right, from a homeopathic point of view. Therefore, as he clearly perceives, no motive whatever is now left which can impel an unprejudiced student into a homeopathic college, unless it be that which is furnished by the proffer of an "exclusive designation," and even this is fast losing its old-time charm. "Hence these tears."

GEORGE LOYD FREEMAN.

Glen Head, L. I., November 30, 1901.

HEMORRHAGE IN A CASE OF NASO-PHARYNGEAL DIPHTHERIA.

I was recently called in haste to see a severe case of diphtheria in which I had used, in all, 5,000 units of antidiphtheritic serum. The patient was bleeding profusely from the nose. I tried all of the available remedies without effect, when I happened to remember that I had a portion of a bottle of the solution adrenalin chloride (1-1000) at my office. I went home and prepared a mixture of 25 drops of the adrenalin solution in one ounce of water, and returned at once with it to the bedside of my patient.

I directed the attendants to swab the nasal cavity with the mixture once every five minutes, and to place a piece of cotton wet with the same solution across the bridge of the nose. The bleeding ceased in a few minutes.

I am constrained to report this experiment without delay, in the hope that the information may be of service to some other physician in controlling hemorrhage, and possibly saving life. I would use solution adrenalin chloride as a local application in any form of hemorrhage when the bleeding point is accessible. Excellent results have also been reported from the internal administration of 5 to 10 drops of the 1-1000 solution adrenalian chloride in hemorrhages from the stomach, kidney, bladder and uterus.

E. B. FINNEY, M.D.

Lincoln, Neb., Dec. 8, 1901.

RETROSPECTIVE DIETETICS.

Diet in Suppurative Troubles.—Arthur A. Beale writes that many years ago his attention was called to a troublesome whitlow which was persistent in pouring out a quantity of unhealthy pus. Directly an abstemious diet was outlined, in which sugar, confections, white bread and pastry were discontinued and wholemeal bread, greenstuff, barley water and milk prescribed. The change was almost instantaneous. There are a large number of suppurative conditions one cannot trace directly to a tubercular history, which would be greatly benefited by a prescribed diet. Bone suppurations, abscesses, boils, carbuncles, suppurations of the various cavities in the head, antrum, frontal, etc., would come under this head. Whether the germs concerned in the process can or can or cannot live by breaking up carbohydrates we

have no doubt that the supply of sugary and concentrated starchy foods does prolong suppuration. The legumes, though often the cause of flatulence and other dyspeptic disturbances, especially if not well cooked and broken up, exert a most salutary influence on these suppurative conditions, probably owing to the calcium sulphide they contain. We know of a case of gonorrhea that was cut short by a feast on peas. For a similar reason onions are useful in these conditions. Beef and hot water will also relieve them. Fruit is not desirable in such cases, especially when preserved.

"In subacute or chronic conditions we should give:

"*Morning and evening* a pint of hot water with a pinch of hypophosphite of soda in it, with an interval of at least an hour and a half between this and a meal.

"*For Breakfast and Tea.*—4 to 6 ounces of wholemeal bread, with ½ to a pint of boiling milk poured over it, without sugar. Or, wholemeal bread, 4 to 6 ounces, with a little butter and some greenstuff, such as watercress, mustard and cress, or lettuce, tomatoes and onions sliced up. Or, wholemeal toast, an egg and cup of cocoa.

"*For Dinner.*—Fresh beef or mutton from the joint or some minced, green vegetable and bread, afterwards custard pudding. Or, pea soup or same preparation of lentils or haricot beans, afterwards custard pudding or very light milk pudding. Or, salad made with lettuce, cress, tomatoes, celery and onions, and wholemeal bread.

"*For Supper.*—A cup of unsugared cocoa, or on days when no salad has been used, an onion sliced and eaten with wholemeal bread and butter."

Infantile Scurvy.—Cautley (*Lancet; Amer. Med.*) reports a number of cases of infantile scurvy due in different cases to a prolonged diet of sterilized milk and to patent foods, and concludes that the boiling of milk for infants is essential, save under most exceptional surroundings; that the longer milk is cooked and the higher temperature to which it is submitted the less will be its nutritive and antiscorbutic value; that such deterioration in its properties is of no serious importance, if it is not forgotten, for it can be very easily remedied; that any healthy infant can be brought up on a diet of boiled cow's milk, suitably diluted and mixed, and given in proper quantities at due intervals; that failure to bring up infants on such a diet is rarely, if ever, due to the fact that the milk is cooked, but is due to some error in the mode of feeding or the amount given; that the very slight tendency to scurvy can be easily remedied by the addition of barley water and a little fruit juice; and, finally, that healthy boys at school can drink uncooked milk with impunity as long as it is not contaminated with disease germs, but that to base on such a fact an argument that infants should be fed on unboiled milk is merely a delightful instance of illogical reasoning.

"Plain Living and High Thinking."—The conjunction of these words is no mere attempt at a taking phrase, we are told by a writer in the *Lancet* (*Lit. Dig.*), but has a sound physiological basis. He says:

"It is the empty stomach that best suits a full head and ideas that flow out freely before retiring with the entry of substantial repast. . . . The brain must have more than its share of the circulating blood. There must be no rival in the full liver or the actively digesting glands of the gastric mucous membrane. Do not eat heavily, then, if you are soon to think hard. . . . The poor, half-starved poet is familiar to every one. We may mitigate our pity by reflecting that in many cases he would have been no poet if he had not starved. Enough fuel to sustain the fire of life is necessary for work, but heap on the coal and you will deaden the overburdened flame. The great thinkers, the great workers in any direction but a purely physical one, have, for the most part, been abstemious men. If not naturally of small appetite they have exercised constant restraint, grudging from the play of higher functions every moment and every energy spent upon the animal activities of their nature. Habit soons helps the fine effort of such people, and it becomes natural for them to eat less, to drink less, and to sleep less than their fellows. Thus, in a long life of intellectual activity many scores of hours are utilized for the main purpose, which, in the case of other men, are squandered upon the dinner-table or in the mere nothingness of sleep or idling."

Toxemia the Great Cause of Danger in Pneumonia.—"The prognosis of pneumonia," says Louis Faugeres Bishop in the *Medical Critic*, "is one of the most difficult of problems. It is the very lack of our knowledge of pneumonia that makes it a fascinating ground for speculation. It is because I have often found the mechanical theory too much emphasized that I wish to lay stress upon the opinion that it is the toxemia that hurries on a fatal termination. Is the heart, at critical times, failing because of resistance in the pulmonary circulation, or is the patient dying from cyanosis because he has not lung tissue left for use?

". . . I have had patients whose chests were almost filled with fluid, and who evidently had extremely little lung tissue; still they did not die. On the other hand, many fatal cases of pneumonia show an abundance of healthy lung tissues, as compared with these cases. They also show a comparatively healthy heart, so I think we are forced to put the exclusively mechanical theory a little in the background, and to consider our cases of severe pneumonia as instances of profound toxemia. Indeed, why should not this be the case when virulent germs have suddenly involved a large and loose tissue organ well supplied with vessels that are certain to carry all the toxines directly into the blood?

"The cyanosis of pneumonia is analogous to that of illuminating-gas poison or that following the abuse of certain drugs. The blood has lost its vitality. The heart in such a condition naturally attempts to carry on the circulation and eventually may wear itself out, but not on account of pulmonary obstruction.

". . . This view of the conditions affecting the results in pneumonia would lead us to be still more guarded in prognosis because the heart may be never so reliable, and a fatal result still be inevitable on account of the profound toxemia."

New Blotting-Paper Test of the Blood.—S. Pertot, (*Wien. klin. Woch.*, August 15; *J. A. M. A.*) suggests a new method of clinical diagnosis of the blood at the bedside, which is based on absorption, and is so simple and inexpensive that it is within the reach of everyone. All that is required is a square of good blotting-paper about the size of a playing card. A small amount of blood is aspirated in a pipette and mixed with water in the proportion of 2.5 cm. to 1 cm. The blotting-paper is placed on a sheet of glass and the pipette is placed inverted upon it, held perpendicularly in a small standard, just touching the paper. The fluid is slowly absorbed by the paper.

and forms rings of various hues, the tints and size of the rings characteristic of the different composition of the blood. Pertot has made hundreds of these blotting-paper pictures of the blood, and found them invariably identical under the same condition of health and disease. The color fades in time, but the rings are still perceptible. The clearest pictures were obtained with the blood of new-born infants; their blood contains a larger proportion of reds than that of adults. Paper treated with dilute hydrochloric acid exhibits a picture resembling a narcissus flower.

Dry Vaccine Lymph.—The *New York Medical Journal* says: "It has been demonstrated again and again that the unpleasant local effects that sometimes follow vaccination are seldom the result of any original contamination of the virus, and they never will be if the most ordinary precautions are taken; hence, the addition of a germicide is not at all necessary, especially that of a feeble one like glycerin, which, whatever else it may do to vaccine, certainly dilutes it, and so, one would suppose, diminishes its potency. Given a vaccine free from noxious contamination—and dried lymph should always be that—what is wanted is one that will act quickly and produce typical pocks. Such, we believe, is dried lymph properly prepared, properly transplanted, and properly used.

RETROSPECTIVE THERAPEUTICS.

Carbonate of Creosote in Pneumonia.—Dr. Leonard Weber reports in the *Medical Record*, No. 2, 1901, nine cases of pneumonia treated with Creosotal, with excellent results, and confirms the statements of others who have used it. He says: "No sooner were the patients under the influence of creosotal than all further anxiety about them appeared to be unnecessary. We visited and examined them twice daily, saw to it that our directions as to nursing and feeding and the exact dosing of creosotal were properly carried out, and had the satisfaction of seeing the patients through the illness without resorting to the usual array of hypodermatic remedies." Dr. Weber is of the opinion that this remedy works in a similar way to the antitoxins furnished by the human body, and which may in favorable cases enable the pneumonic patient to recover. The treatment should be widely disseminated so that all may take advantage of it.

Treatment of Syphilis.—Dr. Winfield Ayres (*London Lancet*) states that mercurol is the best form in which to use mercury. Experiments with mercurol were conducted at Bellevue Hospital, for eight and a half months, with 180 cases; the histories of 95 of these are recorded. The remainder could not be kept under observation and are therefore passed over. The dosage of the mercurol, regulated either by reaching the point of tolerance or control of the disease, varied from one-half to six grains. In 64 of the 95 cases the disease was controlled as follows: in two weeks, 8; three weeks, 12; four weeks, 14; five weeks, 6; six weeks, 5; seven weeks, 2; two months, 8; ten weeks, 2; three months 5; and four months, 1. The remainder are marked thus: decidedly improved, 17; improved, 8; no improvement in two weeks, 3; no improvement in four weeks, 1; and no improvement in three months, 2.

A Uterine Sedative.—The active principles of the *Viburnum Opulus, Dioscorea Villosa, Scuttellaria Lateriflora*, and a combination of aromatics, is the formula of Dr. W. R. Hayden, known as "Viburnum Compound," a uterine tonic and antispasmodic, which is absolutely non-narcotic. This well-known remedy is widening its sphere of usefulness, so that instead of being confined to cases of dysmenorrhea, it is used now in the lying-in chamber to promote normal labor, relieving spasmodic conditions, controlling hemorrhages, lessening after-pains, and as a prophylactic in threatened convulsions. It is a great relief to have a reliable remedy in these affections that is not in the least dangerous, and it will be found a great boon in a host of cases where a non-narcotic sedative is required.

New Treatment of Leucorrhea and of Gonorrheal Vaginitis.—Yeast in the treatment of chronic leucorrhea and vaginitis due to gonorrheal infection has recently been tried with considerable success, Dr. Landau of Berlin being the first to apply it locally by injection for troublesome vaginal secretions, small quantities producing a rapid and complete arrest of the discharge after a few weeks. The application of yeast in this connection is not convenient, owing to its keeping qualities, its offensive smell and the difficulty of obtaining fresh supplies, as well as its inconvenient frothy nature, which makes it difficult of retention when injected. This, however, can be overcome by using the pure desiccated form, known as cerevisine, which may be exhibited in the form of a pessary of cocoa butter filled with cerevisine, and placed in position on going to bed, or a paste made up with glycerate of starch and retained with a tampon of absorbent cotton, or it may be applied by dipping absorbent cotton in a thin paste of cerevisine and water. The quantity for application is not important, as it is perfectly harmless, but from one to two teaspoonfuls can usually be introduced and retained in the vagina during the night, which will give more cleanly and comfortable results than injections of brewer's yeast during the day.

Wound Disinfection with Pure Carbolic Acid.—In an article translated for the *Philadelphia Medical Journal* of May 18, 1901 (*Therap. Gaz.*) Professor Von Bruns does not hesitate to recommend the application of pure carbolic acid in small quantities and for one minute, followed by immediate irrigation with absolute alcohol, as a remedy that forms a valuable adjunct to mechanical procedures in infected wounds. He says that carbolic acid in concentrated solution is relatively less toxic than when diluted, that its penetrability during its brief influence is but slight, and that the bactericidal action of pure carbolic acid surpasses that of sublimate in albuminous compounds.

After incision, and subsequent curetting or excision of the wound, the surrounding skin is protected against the excess of carbolic acid by wetting it with absolute alcohol; the wound is then thoroughly swabbed with a gauze sponge previously immersed in pure carbolic acid. The amount of acid employed depends upon the size of the wound, but more than two to six grains was not used in the largest wound; therefore, not more than is injected in a hydrocele sac and left there with impunity.

The cauterization is not particularly painful, and it may be performed without anesthesia. The subsequent pain after fresh incisions is also remarkably slight. Particularly remarkable is the small amount of secretion after the first dressing, so that the latter may remain from two to four days in cases where otherwise the dressings would have had to be regularly changed after twelve to twenty-four hours.

For example, in a case of resection of the hip-joint, performed on account of grave, acute puerperal suppuration, the first dressing was allowed to remain four days, during which the temperature was nearly normal.

Goose Grease in Ringworm.—Dr. Jackson (*Med. Age*) has had experience in the tratment of ringworm of all kinds. For this purpose he uses the crystals of iodine, one-half to one dram, rubbed up in goose grease, one ounce, and directs that the ointment be thoroughly worked into the patches by means of a stencil or stiff paint brush. His success has been especially marked in curing ringworm of the beard. Under the microscope hairs show staining down to the bottom of their roots. On the scalp of a child it does not seem to be very irritating, and the patches get well.

The greatest difficulty in the way of using goose grease is in getting it. The best quality of the article is very expensive, as it is made from the fat taken from a dead but uncooked goose, which spoils it for cooking, and so a few ounces of fat costs as much as the whole goose. . . . Some perfume may be added to make it pleasant to use.

The Hygiene and Mechanical Treatment of Heart Disease.—An address on the above subject by Boardman Reed (*Amer. Med.*, Sept. 28, 1901 concludes with the following summary: (1) Cardiac disease is often due to auto-intoxication, especially to poisoning by the alloxuric bases; (2) cure or amelioration in such cases requires at first, in addition to an appropriate diet, not too nitrogenous, the utmost practicable rest of the crippled organ. This cardiac rest may be further promoted by very gentle exercises which dilate the capillaries without taxing the heart; (3) the Nauheim method of treatment spares the heart by dilating the too contracted arterioles in two ways—(*a*) by stimulating the peripheral circulation through carbonated saline baths; (*b*) massage and movements against resistance, so mild as not to quicken the pulse.

Drugs in Tuberculosis.—In the *Journal of the American Medical Association* for February 23, 1901 (*Cleveland Journal of Medicine*) Dr. Solis-Cohen writes concerning the true rôle of drugs in tuberculosis, that they play a useful but secondary part; that the principal means of treatment of these patients are included under the general terms of hygienic measures which reinforce the patient's recuperative energy, and this conquers the disease. Agents to improve digestion are useful from the standpoint of general nutrition, and of the drugs which combat more or less directly the local and hemic results of bacillary invasion the iodine group and the creosote group have stood the test of time. Of these the first is especially of value in the early stages of pulmonary infiltration, while the second, or creosote, is of most value when the destructive changes have begun and when pyemia is present. Of the iodine group he prefers iodoform, begun in small doses, one-half grain three times a day, and gradually increased to tolerance; and of the creosote derivatives thinks the carbonate is the best, the objection being its high cost. Dr. I. Burney Yeo, in the *London Lancet*, states concerning tuberculous peritonitis, that under present methods of treatment, medical and surgical, 50 per cent. of these cases recover. His method of treatment consists in the application of iodoform ointment to the abdomen, and the internal administration of iodine and creosote in small doses, and he believes this line more promising than surgical interference. Iodine is, we know, by many recognized as one of our best antitubercular agents, and Dr. Yeo's results are encouraging from a therapeutic standpoint. The general trend, however, of opinion is probably toward surgical methods in such cases, although in children it is asserted the tendency is toward recovery. In addition to the drugs usually employed in tuberculosis Dr. Howard S. Anders calls attention to two which he has found of value that are rarely referred to: they are oil of sandalwood and the oil of erigeron, the first in 10-drop doses every three or four hours to relieve the distressing cough, and the second in 5-minim capsules every few hours has greatly benefited in hemoptysis.

THE NEWER TREATMENT.

THE USE OF INTRAVENOUS SALINE INJECTIONS MEDICALLY.

FOR some time surgeons have been in the habit of using intravenous injections in cases of collapse following hemorrhage or severe injuries, so that now this therapeutic measure has become a valued agent. It has displaced the old-fashioned method of transfusion of blood. It was the fear of air-embolism that has held back this operation from getting into general use. But as experience grows, it is shown that these fears were ungrounded.

Experimenters have tried the injection of various substances into the veins with more or less success. Wood reports the proposition of Prof. Oré of Bordeaux, who suggested this procedure as a substitute for anæsthetics in surgery and as a means of combating tetanus. In some cases it has produced good results; in others apparently it has been the cause of death, and Wood believes that its use is absolutely unjustifiable for two reasons: In the first place, chloral occasionally acts with unexpected violence, and it has been the cause of death even when given in what is considered safe doses by the mouth. It is very evident, therefore, that this danger is greatly increased by throwing the whole force of the medicine at once into the circulatory system. Again, chloral exerts a great influence on fiber, and has even been used to coagulate the blood in varices. Tillaux has reported a case in which venous coagulum was found after death extending up the arm even into the axillary vein and accompanied by white heart clot.

Stark has tried large injections of hæmaglobin in animals of the same species and he has injected into human beings as much as 10 cc. of a 10 per cent. solution of hæmaglobin obtained from horses, but beyond being an interesting experiment its results have as yet been of no value.

Pitres has used injections of iodoform for the purpose of causing contraction of the thyroid gland, injecting the drug directly into the thyroid body. It is reported that the gland diminished in size and that there was a distinct amelioration of the symptom, although there was no absolute recovery of health. Davezak injected iodoform ether into the thyroid and he found that the injections were very painful and that a peculiar ballooning of the tissues frequently occurs, which led him to think that possibly he had injected air. His after-results were good, however; the circumference of the neck diminished, the exophthalmos decreased, and the insomnia disappeared.

When it comes to the question of intravenous injections in general there are undoubtedly three indications for its use: First, to affect the system by throwing into

the circulation certain medicines in a form to make their therapeutic action more positive; to restore deficiency in the vessels after a considerable loss of blood; thirdly, to eliminate poisonous principles by making a great quantity of fluid pass through the circulatory system to be excreted by the kidneys.

In regard to the first division we have already spoken, and we must admit that this method is more generally applicable when rapidity of action is desired. For example, in cases of pernicious malaria, when we feel that the next chill will prove fatal, then the lactate of quinine thrown into the system may be of vital importance to the safety of the patient. Again, in cases of rabies, tetanus, convulsive uremia, puerperal eclampsia, delirium tremens, strychnia poisoning and other forms of disease.

To restore the deficiency in the circulatory system after the loss of blood we find that this method is useful in Asiatic cholera. Hayem says that two or three injections daily should be the limit, while Mayet advises five or six, or even more; although the quantity of liquid should not exceed 300 c.m. at each injection.

A limited use of this method is an acute poisoning by such agents as oxalic and sulphuric acid, certain preparations of arsenic, salts of lead and mercury, chlorate and nitrate of potassium, and to a less degree the alkaloids and digitalis.

As yet intravenous methods of feeding have not passed the period of experiment, and until better results have been obtained in animals the subject must not be considered as fit for human therapeutics. Muggia has tried for subcutaneous injection of the yolk of an egg in the buttocks or lumbar region of anæmic children. He practised gentle massage after the injection. He states that improvement took place.

Hare reports the two following cases in which intravenous saline injections were used:

A man of sixty-odd years developed acute toxemia, with high fever and coma, owing to the sudden extension up the leg of gangrene of the toes. At first he could only be roused by speaking sharply to him; later he became still more comatose. His muscles became spastic. Twelve hours after the onset there was injected about one quart of warm normal saline solution into a vein of the arm in the course of an hour. The man developed a severe rigor, then broke out in a profuse sweat, and next morning, ten hours afterward, was perfectly conscious, said he felt first-rate, but later in the day became comatose again and died. He was doomed from the first because of his gangrene.

The second case is that of a man with chronic parenchymatous nephritis, who came into the hospital with twitching of his muscles and semi-comatose. He had passed scarcely any water for several days. He had had constant headache for six months and was markedly edematous from head to foot. He was too weak to be bled, or to be purged, or to receive pilocarpin, and seemed too ill for a sweat from a hot pack. I injected one quart of hot saline solution into a vein of his arm. He also had a mild rigor followed by a sweat, and in three hours thirteen ounces of urine were obtained from his bladder. The next day he said he had no headache, no dizziness, no pain anywhere, and felt no discomfort. His dropsy was not increased. Ten days later, as his uremic condition seemed to be returning, I repeated the injection, with similar results.

The apparatus devised by Prof. Hare is constructed as follows: A glass container such as is used for irrigation purposes in antiseptic surgery is set in a frame in order that it might stand on a table; to the bottom of this container is attached four or five feet of red Para rubber hose and at the end of this rubber hose is inserted a plain glass canula. A clip is placed upon the hose in order that the flow may be controlled, and the canula of the tube that has been attached to the blood vessel joined to the tube running from the irrigator at the moment they are both completely filled with liquid, so that no globule of air will be found in the tube.

Probably the best fluid for use in these cases is that described by Edes, which is as follows: The formula is one-tenth gram of chloride of calcium, .75 gram of chloride of potassium to 1,000 cubic centimetres of normal salt solution. This solution has been used in the Massachusetts General Hospital in quantities varying from 200 to 500 cubic centimetres. Dr. Edes states that its use in this hospital started from suggestion made to him by Dr. Howell, who had been making a number of experiments along this line. Prof. Howell found in one of his experiments that calcium salts are essential to the clotting of the blood. Another set of experiments consisted in passing different fluids through a frog's heart and observing the character of the beats and the length of time the beating was sustained by such fluid. Blood serum he found sustained the beats well for a long period of time. A solution of the albumens of the serum without salts did not sustain the beats well, nor did a normal salt solution, while the addition of calcium salts alone to the salt solution caused strong beats, which were too prolonged however, and inefficient; but Prof. Howell found that the addition of a small amount of potassium chloride corrected the character of the beat and that this combination of the normal salt solution with the calcium and the potassium sustained heart beats as well and as long as blood serum itself.

It was not far from this that the suggestion arose to use this fluid in cases of human hemorrhage in place of the simple salt solution. Ringer's fluid is 100 cubic centimetres of a .75 per cent. solution of the chloride of sodium saturated with the phosphate of calcium, adding one cubic centimeter of two per cent. solution of chloride of calcium. It can be seen therefore that Edes' modification is an improvement. Edes used this fluid and has reported several remarkable recoveries from hemorrhage and shock with it.

French and German literature is full of cases which have been reported for this line of treatment. One of the most remarkable of these cases is that which Berlin reported to the Société de Chirurgie of a woman who three days after vaginal hysterectomy showed such marked signs of septic infection that her recovery was thought to be absolutely impossible. The abdomen was distended and painful; there was marked subnormal temperature and frequent emesis. On the next day the patient seemed to be about dying, whereupon Berlin gave an intravenous injection of a little over a pint of artificial blood serum and shortly afterwards he repeated the injection, using not quite two pints. Marked cyanosis and increased gravity of the symptoms followed at once, but shortly afterwards there was decided improvement and the patient recovered, being completely convalescent by the twelfth day of her illness.

The Medical Board of the Metropolitan Hospital request us to state that it disavows any connection with the alleged discoveries in regard to the treatment of tuberculosis in that institution, and is in no way responsible for the publicity which has been given the subject.

MISCELLANY.

—A monument to the memory of the late Dr. Alexander J. C. Skene is to be erected in Brooklyn at a cost of $25,000.

—A statistician has discovered that the average business walk in New York is a mile in twenty minutes, and the church-going walk a mile in twenty-five minutes. The fastest walk is that of the homeward-bound Brooklynites, a mile in eighteen minutes.

—The editor of *Our Dumb Animals* is reliably informed that the manager of the Lydia Pinkham Medicine some time since contracted with a large advertising agency to pay them for ten months' advertisement $100,000 a month (a million dollars in all). This, he says, illustrates the power of the press.

—In a public address the other day the Archbishop of Canterbury remarked that only three years ago he was an "odd" man, who did not indulge in intoxicating liquors, but that public opinion in England was so rapidly changing that it seemed likely that before long the "odd" man would be he who did thus indulge.

—A rapid pulse soon after the receipt of a traumatic injury to the brain points to contusion or laceration, rather than to hemorrhage or compression. It must be borne in mind that injuries to the brain, sufficiently severe to prove rapidly fatal, are usually attended by a frequent pulse soon after the occurrence of the injury.

—The Duchess of Marlborough has given $10,000 to aid in erecting a hospital a little way out of Paris for Americans, and is using her influence upon the wealthy members of the American colony to have them assist in the work. It is estimated that the regular number of Americans in Paris is 60,000, with a floating population of 40,000 more.

—The occurrence and cause of green or blue urine is discussed by Weber (*Lancet*, September 21; *Am. Med.*), who directs attention to the common coloring of th urine by methylene blue. He believes that when apparently healthy persons in England pass green or blue urine the real explanation is generally that they have indulged in sweets colored with methylen blue.

—In fractures of the skull, whether simple or compound, there is no need of trephining if there is no depression, as a rule. But these cases should be carefully watched, as symptoms of pressure may arise, for the reason that portions of the inner table may be displaced and cause pressure without any appreciable change in the position of the outer bony surface.

—The Prefect of Police in Paris recently issued an order that wet nurses must not leave their own infants to be bottle fed, but must see to it that they, too, are wholly or in part nourished at the breast. This has caused a great scarcity of wet nurses, and the Parisian mothers are in despair at having to choose between suckling their own offspring and bringing them up on the bottle.

—In the suburbs of Paris a physician was recently sentenced to pay a fine of $40 and $600 damages for having told the prospective mother-in-law of a patient of his that the patient was tuberculous, thus bringing about a rupture of the projected marriage. Medical testimony at the trial showed that not only had he divulged a professional secret, but his diagnosis had been absolutely wrong.

—Mr. A. C. Burrage, a wealthy Boston lawyer, has leased Bunkins Island, near Boston, for a period of 399 years. Mr. Burrage purposes to erect a hospital and lay out beautiful grounds for crippled children. Some years ago his nine-year-old little son was seriously injured and has remained a cripple ever since. This touched the sympathetic father's heart, and he is now about to do some real charity.

—An institute for medical diagnosis has been recently conducted in Berlin. During the first year 3,000 cases have been brought to it by practising physicians who desired its scientific aid in the diagnosis of their cases. This fact, together with the valuable contributions to science published by those working there, and the educational influence of such an institute, are considered as evidence amply justifying its existence.

—The municipality of Paris contemplates the abolition of the domestic dust bin in favor of one of the more economic and effectual methods of waste removal which have been submitted, says a correspondent. Great perturbation is caused by the proposal, as 40,000 men and women subsist entirely by sorting the contents of the threatened bins, and it is pointed out that all these people, with their families, must be reduced to starvation.

—E. Aron (*Berl. klin. Woch.*), Sept. 23, has for eight years been making observations on the effect of oxygen inhalations in health and various forms of disease in which dyspnea is a prominent factor. These investigations, as well as experiments on animals, lead him to believe that there is no advantage to be derived from the use of oxygen inhalations except in cases of carbonic-acid oxide or anilin-oil poisoning, and in diseases resulting from the action of rarefied air.

—There is a village in Austria, near the Adriatic, where the nudity cure is practised. The debilitated neurasthenics, the tired, etc., can go there, and, in the costume of Adam, expose their persons to the air, the sun's rays, or the rain. Thickets are carefully arranged so as to cut off all view of the patients. A hat and short trunks only are allowed; the sexes are separated. Baths, massage, gymnastics and games are indulged in, and a strict vegetarian diet completes the treatment.

—And now (the *Pacific Med. Journal* says) the Denver doctors propose to exterminate imbecile children. After describing a female imbecile child, aged 20 years, one of six in the family, etc., the doctors want to petition the legislature as follows: "Your petitioners, therefore, believing the State to be responsible under these circumstances, humbly ask your honorable body to take this matter in hand, to have a commission appointed to examine into the true state of this creature's mind and body, and if the within facts and statements are thereby verified, to carry out said painless extermination of this defective life."

—Moscow, Russia, is successfully operating a new method for purifying the city's water. The plan is to sterilize the water by the introduction of ozonized air. It is said that the bacteria in the water are thus destroyed, and, at a comparatively small cost, the product is rendered absolutely safe for drinking. The system is based upon the principle that oxygen burns all organic matter with which it comes in contact in water. Experiments with the system have been made in France, Germany, Holland and Belgium. The water by this method is rendered colorless, sparkling and odorless. The cost is about $6.25 for each 1,000,000 gallons.

ORIGINAL ARTICLES.

EARS AND WHAT WE SHOULD KNOW ABOUT THEM.

BY EDWIN W. PYLE, M.D., JERSEY CITY.

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SUFFICIENT learning to comprehend the function of hearing, and to know the significance of certain aural symptoms, is only the alphabet of what may be acquired in this special branch of medicine.

The eye, though wondrously adapted to the necessities of man, and to the kaleidoscopic changes of creation, is limited to the direct rays of light; while the ear interprets as well in darkness, and gathers instantly the vibrations from whatsoever source. In the quietude of study, hearing may familiarize with all that transpires in the world about us. Whether above or below, in the yard or busy thoroughfare, the sports of childhood, the passing throng, the rattling vehicle, the vexatious piano, the band of music; nay—multiply it all many fold, and the ear will analyze distance, direction, and character.

For clearer comprehension, we should know: First, what we hear; second, how we hear.

Vibrations of matter propagate a series of waves of condensation and rarefaction in all directions. When these come in contact with the terminal filaments of the auditory nerve, the sensation produced is called sound. Sounds differ in the number of vibrations per second, which makes the various degrees of pitch. If the sound-waves be long, the pitch is low; if the number be great, the wave-lengths are correspondingly small and the sound piercing. The number may be too few to produce continuous sound, and too many to be recognized. Musical instruments are constructed upon this principle. Thus in the lowest orchestral note there are 40 vibrations per second, and in the highest 4,752. The normal ear recognizes as few as 16 vibrations, and as many as 40,000 per second. Sounds differ in loudness, which depends upon the force and amplitude of the vibrations; also in quality, due to the vibrating character of the material and the reinforcement of overtones. This constitutes the individuality, or the distinguishing property of the same tone, as produced by different voices or instruments.

The composite nature of sound demonstrates the ear as essential to our pleasures as the eye, more complex in its adaptation, and as dependent upon nature for delicacy of function.

How we hear is not less interesting, but is more difficult to simplify in explanation. A tree may fall in the forest, giving rise to sound-waves, but unless there be an internal ear or labyrinth to receive them, and a brain to interpret significance, there is no sound. The atmosphere may be full of light and odoriferous particles, but without the retina there is no sight, and without the olfactory cells no fragrance.

Functionally, the ear has two divisions—that which conducts vibrations, and that which receives them. The auricle, canal, drum-membrane, and ossicles constitute the former; the internal ear the latter. The auricle and external canal have the definite proportions which carry sound-waves without modification. The drum membrane, $^1/_{220}$ of an inch thick, protects the sensitive parts within, and transmits all pitches and qualities without accentuation.

The middle ear is too small and irregular to have an echo. It is spanned by a chain of bonelets which, with the normally contained air, constitute two intermediaries to convey vibrations from the membrana tympani to the labyrinth. There is no better illustration of the adaptation of means to ends than exists in the transmitting mechanism. Perfect, yet so ordained that with its total destruction a fair amount of hearing may be retained by the impacting of sound-waves upon the head, the vibratory motion being imparted to the terminal hearing cells. The wisdom of such protection is manifest when we recall how great the exposure to injuries, and to diseases. The bird, while asleep, roosts automatically, because the flexing of the legs on the body enables the claws to grasp the limb with unabated firmness. Nature has many such manifestations of Almighty wisdom, but nowhere greater than in the ear.

Sound-waves, like those of light, are reflected or refracted in passing from a rarer into a denser medium, as from air into water; but if there be a thin membrane interposed, and be free to vibrate, the sound-waves are transmitted with slight loss of intensity. This is precisely what exists at the entrances to the labyrinth; the oval and the round windows are covered by membranes, which transmit the delicate wavelets of sound, and without their pliability the loudest noises would scarcely be audible. It may be noticed here, incidentally, that whereas hearing is most seriously affected when the auditory nerve is paralyzed, the greater amount of deafness is due to exudates which destroy the excursive function of these fenestral membranes.

The terminal hearing cells must necessarily be sensitive. To bring them in contact with the uncontrollable elements without pain and injury is a problem, solved in the following manner: First, the labyrinth is guarded by a drum-cavity, which is essentially an air chamber with two safety valves, one extending backwards into the irregular mastoid cells, the other communicating with the pharynx through the Eustachian tube; second, by transmitting sound-waves to the terminal cells through the interposition of fluids having overflow facilities with one another and with the subarachnoid spaces. Thus cushioned by air and water, the ear is prepared not only for harmonies, but equally well for sudden and discordant noises.

The labyrinth is too complicated to give more than a cursory idea of its functional anatomy. It consists of irregular excavations in bone, with no communication with the outside world save by the two windows, so placed as to escape mechanical injury. A central cavity—the vestibule, communicates posteriorly with the semi-circular canals, which probably control muscular coördination. Anteriorly, the vestibular walls emerge into the cochlea—a snail-shaped body that winds two and one-half times around a pyramidal axis. The lumen of this spiral tube is divided into two equal portions by a delicate septum of bone and membrane, extending from base almost to cupola. The upper division begins with the oval, and the lower ends with the round window. Were it possible to pass through the drum membrane, cross the middle ear through the air or by the span of bonelets to the foot-plate of the stapes, thence through the oval window, up the winding stairs, through the summit and descend the other side, the journey would end at the round window. It is essential to keep this excursion in mind, for it is probably the course that sound-waves take through the labyrinth.

According to the law of physics, respecting the non-

*Read by request before the Machaon and the N. J. Medical Clubs.

compressibility of liquids, for every motion of the oval window *inwards* there must be a compensatory one of the round window *outwards*.

The inner surfaces of the internal ear are lined by periostial tissue with cell-elements, which secrete the perilymph. In this floats a membranous labyrinth filled with a fluid—the endolymph, that comes directly in contact with the organ of Corti which contains the specialized hearing-cells. To avoid anatomical confusion, let us observe here the inverse analogy between the piano and the labyrinth.

This instrument is an ingenious device, but for compass, delicacy and completeness is incomparable to the organ of hearing. It has ninety pairs of strings of various lengths with which *to give forth* vibrations; but on the dividing membrane in the labyrinth is a microscopical keyboard which has 10,000 rods and 21,000 hair-cells, being nerve-endings of different lengths, *to receive* the multiplicity of sound-waves. Every one of these nerve-endings responds to its particular number of vibrations imparted by the surrounding fluids, and transmits the same to the higher centers of the brain, which by education and association give us knowledge of the sound and the sound-producing body. Thus if you strike the piano key that represents 512 vibrations, or middle C, one particular nerve filament carries that impression, and for a harmonious combination of sounds there is a corresponding response. This analogy and conclusion may not be absolutely correct, but they serve to a clearer comprehension than the narration of microscopical anatomy.

The great number of rods and hair-cells may account for the delicacy and exactness to which the sense of hearing may be educated, as exemplified in the piano-tuner. They may also explain the great range of audition and the wonderful interpretation of sound-waves. It is said that an orchestral leader can detect, during the din of performance the $^1/_{32}$ of a semitone.

In adult life inability to hear gives rise to suspicion, to discontentment, and to indecision. In childhood it shuts out the valuable sound educational period when language is to be acquired, dwarfs mental faculties, limits practical usefulness, and removes from the sympathetic intercourse with the world. The adult exercises the auditory function in his ceaseless efforts to comprehend, but the child unfortunately resigns himself to his solitary fate and thus progressively grows deafer.

To recognize pathological conditions it is essential to be familiar with the physiologic tests, and the normal appearances of the drum membrane. The hearing distance for the average watch is fifty inches, and for the forced whisper as many feet. Weber has demonstrated that in normal audition a tuning-fork set in vibration, and placed on the median line of the head, is heard equally well in both ears; but if the meatus of one be closed, it is heard louder in the obstructed ear. Rinné has observed that a vibrating tuning-fork held opposite the meatus is heard twice as long as when the shank is placed upon the mastoid process, or that air is superior to bone conduction. A knowledge of these facts enables us to approximate whether deafness be due to nerve or other lesions. Thus in the Weber test, if the tuning fork be referred to the *deafer ear*, there is obstruction to the exit of sound-waves through impairment of the transmitting apparatus. It may be due to a foreign substance, occlusion of the Eustachian tube, thickening of membranes or anchylosis of the ossicular chain. If, however, the sound be more distinctly heard in the *better* ear, deafness is due to the nerve. If in the Rinné test the sound be heard *longer* when the vibrating fork is placed *behind* the auricle, bone conduction is superior to aerial, and deafness is due to obstructive lesions. If the relation between bone and air be unchanged except in point of *duration*, each being shorter, we may suspect nerve lesion.

An examination of the fundus of the canal requires reflected light, specula to aid vision, a silver probe to verify, and a cotton-carrier to remove minor obstructions. The best source of illumination is the daylight of a clear atmosphere, as no color is communicated to parts inspected. Gas gives a yellowish tinge, for which due allowance must be made. The canal is slightly spiral and narrowest at the central portion. The outer third is cartilaginous, set at an agle with the bony portion, which requires the examiner to raise the auricle upwards and backwards to view the fundus. In very young children, however, the reverse movement is necessary. The drum membrane is one and one-quarter inches from the external meatus, placed at an agle, both with the horizontal and the perpendicular plains of the canal. This brings the upper and posterior portion nearer the observer—a fact to be remembered in all manipulations. It should have a translucency and a polished appearance, due to light reflection from a thin epidermis. These qualities, however, are not so apparent in the two extremes of life.

The handle of the malleus is the most important landmark, ending at a central opacity—the umbo, which indicates the greatest concavity. At the superior portion is the short process—a peg-like projection with a tense covering. From this can be traced backward and forward, respectively, the posterior and the anterior folds. Above these and the short process is a portion of the drum-head which physicians rarely see, and yet most important in the manifestation of middle-ear disease. It contains no fibrous tissue, appears to be a reflexion of the superior lining, and is known as Shrapnell's membrane. It has the same color as the canal and covers that portion of the tympanum which gives rise to the most intractable suppuration.

It is not always easy to determine the presence of a drum membrane. Dr. Dench's rule is to follow one wall as the superior, until the line of vision crosses the fundus to the inferior, or the posterior across to the anterior. If the membrane be present there will be no break in the continuity. The portion above the short process is rarely absent. If the lower part be destroyed a bent silver probe can be passed up into the attic for diagnostic purposes.

The most frequent foreign substance encountered is cerumen. Just within the meatus are many glands to secrete a semi-fluid to relieve dryness, prevent the growth of fungi, and the excursion of insects. The epithelial growth begins at the center of the drum membrane and pushes out in all directions to discharge cerumen imperceptibly at the meatus. This delicate function points out the wisdom of a wise adjustment of means to ends. By accident, or fastidious cleansing, nature occasionally becomes embarrassed, hence the accumulations. These should be removed invariably by the syringe. If necessary to soften by the use of hydrogen peroxide, or a compound of soda, glycerine and water, let it be remembered that in supplying moisture the canal is converted into an incubator, with the danger of inducing furuncles, which are hair-follicles inflected through the agency of micro-organisms. The presence of inanimate bodies in the canal does little harm as

compared with the efforts made to remove them. If forcible syringing fails to dislodge, never use another instrument, except under bright illumination aided by direct vision. To remove foreign substances, to relieve inflammatory pain and products, the physician should rely upon the syringe or the aural-douche, rather than attempt instrumentation. If the drum membrane be ruptured, as from a blow or a thrust, slight tinnitus and deafness follow, and a clot of blood with irregular outlines indicates the solution of continuity. The keynote of treatment is to drain by a strip of iodoform gauze, delicately introduced by sterilized forceps. Nature supplies her own asepsis in pouring out a provisional alkaline fluid. If odor and suppuration follow, treatment must be according to surgical principles.

Pain is perhaps the most significant aural symptom. It varies with individual susceptibilities, and generally denotes pressure upon sentient nerves. When neuralgic it is disassociated with redness or swelling, centers mostly around the tragus, and is probably reflex from some dental cause. The frequent aural pain of childhood is significant of Eustachian obstruction, which gives rise to *hydrops ex vacuo*, or muco-serum secretion within the tympanum. This accumulation may disappear by absorption, but usually ruptures spontaneously through the drum membrane with immediate relief.

Inflammatory pain is Nature's warning of molecular death, and is accompanied by redness, swelling and suppuration. If increased by motion imparted to the canal, as by pulling the auricle, and especially if the canal-lumen be diminished, the cause is furuncular. But if the above characteristic symptom can be eliminated, if the tympanic membrane has lost its luster and swelling has obliterated the natural land-marks of the malleus we may presume upon a middle-ear inflammation.

Pain continuing or returning after an acute discharge indicates insufficient drainage. Pain supervening upon a chronic discharge has a greater significance than under acute conditions, and possibly indicates intercranial complications. Tenderness on pressure over the mastoid, accompanied by pain and fever, is significant of an invasion of the mastoid cells. An otitis media may give rise to serious lesions without perforating the drum membrane. A chronic discharge is considered grave, and those afflicted have not the average duration of life. This fact is verified more by infirmary experience than by general practice. Neglected cases, and those in which there is bone erosion, may be accompanied by disagreeable odor. Experience has taught, however, that offensiveness is no criterion of danger, and that most serious lesions follow an odorless discharge. Hemorrhage from the ear, relative to accident, does not always indicate fracture of the base; it may come from a rent in the tympanic membrane, and has less significance than an abundance of serous fluid. If during the course of a middle-ear disease the auricle stands out prominently from the head, and especially if there be fluctuation over the process, a subperiostial accumulation of pus has taken place and the necessity of a mastoid operation is indicated.

Dizzines accompanying a chronic aural discharge not relieved by measures directed to the alimentary canal is significant of labyrinthian pressure, erosion of the external semi-circular canal, or intercranial pressure and should be relieved by radical surgical procedures.

These facts may be termed the alphabet of otology, with which all who assume the doctor's responsibility should have intelligent familiarity.

ANGINA PECTORIS.

BY EGBERT GUERNSEY RANKIN, A.M., M.D., NEW YORK.

Part II.

DIAGNOSIS.—The characteristic features of true angina pectoris are the sudden, intense pain, substernal and radiating, the mental anguish, and sensation of impending death. The positive recognition of arterio-sclerosis, myocardial degeneration and aortic disease constitutes a most reliable guide to diagnosis. Features of secondary importance are the abrupt cessation of the paroxysm and its excitation by movement of the body.

Differential Diagnosis.—It is of paramount importance to distinguish between angina dependent upon organic disease, and that of functional or neurotic origin. In many instances this is not difficult, but in others it is sometimes the reverse.

The history, age, sex and the nature of the paroxysms must all be taken into consideration. It must be borne in mind that unless associated with aortic disease, aortitis, or aneurysm, true angina is seldom seen before forty-five years of age. Sex is also an element in the diagnosis, as the affection is extremely rare among women except in the instances just mentioned, while the neurotic type is comparatively common in females over thirty. The presence of a lowered condition of the system in the female sex from any of the causes discussed in the ætiology points strongly to the pseudo variety.

In the hysterical forms the pain is usually diffuse, involving, in some instances, the whole left side of the body in contradistinction to the more confined area of true angina. The discovery of hyperæsthetic areas, hystero-genetic regions, clavus, etc., and the presence of palpitation will establish the neurotic element.

Moreover, the patient in hysterical angina is emotional and inclined to walk up and down the room emitting exclamations of distress. The direct reverse of the immobility of angina of organic origin.

In cases of a purely vasomotor type the history of excitation by cold, the prominence of the vasomotor symptoms, coldness and tingling of the extremities, numbness, especially of the fingers (local syncope), should direct attention to spasm of the arteries as the cause of the phenomena.

In tobacco angina, the history of excessive use of tobacco with the evidence of chronic nicotine poisoning, as manifested by the characteristic cardiac symptoms gastric and nervous disturbances, will point to the true condition.

Neurasthenic types appear in younger persons, and are recognized by the presence of phenomena characteristic of that condition, namely: paræsthesias, hyperæsthesias, agraphobia, etc.

In the reflex forms in addition to the neurotic symptoms there is very often some functional disturbance of the alimentary canal, as shown by indigestion, dilatation of the stomach and intestines, vomiting and flatulence. The possibility that the reflex conditions may be of pelvic origin is not to be forgotten. Intercostal neuralgia and gastralgia may to a certain extent simulate angina, but it is scarcely possible that either should be mistaken for it. Attacks of cardiac asthma in association with pain in the præcordial region are more likely sources of error. In true angina, however, dyspnea is not a prominent nor an essential symptom, while in cardiac asthma the pain, if present, is secondary to

the difficulty in breathing. Moreover, in the latter condition, there will be evidence of venous stasis.

The following is a summary of the most important points in the differential diagnosis:

True angina pectoris.	Pseudo angina pectoris.
Ætiology frequently recognized in the presence of arterio-sclerosis and aortic disease.	Ætiology often traceable to neurasthenis, hysteria, tobacco, reflex irritation.
Occurs generally after 40 to 45 years of age.	May occur at any time of life.
More frequent among men.	More frequent among women.
Rarely periodic.	Often periodic.
Induced by effort or exertion.	Generally instantaneous in onset.
Pain intense, constrictive. Substernal and usually localized at the level of the aorta.	Pain generally distensive. More diffuse over cardiac region.
Patient motionless and silent.	Patient agitated, restless and emotional.
	Neurasthenic and hysterical symptoms present.
Prognosis unfavorable, generally fatal.	Prognosis favorable, generally recovery.

Prognosis.—During the paroxysms of true angina pectoris the patient is always in great peril, and it is impossible to foretell the outcome. Some die in the first attack, others may live through a number until one appears which terminates in death.

Angina dependent upon arterio-sclerosis and chronic interstitial myocarditis is most grave. The association of aortic insufficiency is an additional element of danger, but the presence of other forms of valvular lesions is not in itself necessarily of serious significance. Many of the most serious forms of angina are free from any evidence of valvular disease. The existence of chronic nephritis is an additional source of danger. Recurrence at short intervals of severe attacks, especially if induced by slight exertion, must be regarded as of serious import.

Notwithstanding its gravity, recovery is possible, and there are instances in which the attacks have been entirely cured.

In the varieties which fall under the head of pseudo angina the prognosis is seldom grave, and on the removal of the exciting factors they generally disappear.

Treatment.—The treatment of angina divides itself into that of the paroxysms and that of the intervals.

Treatment of the Paroxysms.—Prompitude is requisite. Amyl nitrite is of first importance. From three to five drops, according to the severity of the attack, should be placed on a handkerchief and the patient allowed to inhale the fumes. The remedy is especially indicated where there is increased vascular tension, but has been extensively used in all forms. Inhalation produces a sense of fulness in the head and a feeling of intoxication without loss of consciousness. It should be discontinued as soon as relief is obtained, or when the pulse and respiration have much accelerated.

Nitroglycerine, although given more as a preventive, is also administered during paroxysms. Compared with amyl nitrite, it is much more lasting in its effects, but its action is much slower. On this account it is best given hypodermically. The one per cent. alcoholic solution, or the second decimal dilution, may be thus administered in one minim doses. The remedy is better suited to milder cases and those of the vasomotor type.

Morphine is valuable, especially when the pain persists. It may be given hypodermically, in doses of ¼ grain, to be repeated cautiously in half an hour. Some prefer the combination with atropine. Morphine will sometimes act when amyl nitrite has failed, or it will prove helpful in association with it. It has the additional property of steadying the heart action, and is especially indicated when the pain is not only persistent but very severe, the pulse high and respiration accelerated. While caution is necessary in its administration, great tolerance of the drug is sometimes observed. It should be borne in mind that many of the best authorities warn against its abuse.

When the amyl nitrite fails, chloroform or ether may be administered. Ether is preferred generally in this country. A few teaspoonfuls in a saucer, and the patient allowed to inhale the fumes, is a suitable method of administration (Romberg). Chloroform is preferred by the British profession. A safe way to administer it is to pour some on a sponge inside a wide-mouthed bottle, place the bottle in the patient's hands, and allow him to inhale; as soon as the effect is produced the bottle falls from the hands (Balfour).

Local applications over the region of the heart are of great service, and should never be omitted. Ice-bags should be tried first, as they are often effective. One case under the writer's observation in the Metropolitan Hospital; after the failure of morphine and chloroform, was promptly relieved by this measure. Swallowing small pieces of ice is often useful. Hot applications, on the other hand, suit some cases better.

During the paroxysms the heart must be carefully watched, and any tendency to syncope met with stimulants, such as brandy or whiskey, hypodermic injections of ether or camphor. In some cases digitalis, hypodermically, acts well. Caffeine is preferred by some observers.

When vasomotor symptoms predominate, and in the forms so denominated, the nitrates are especially indicated and are assisted by hot foot-baths, followed by friction to the extremities. Cold should not be used in this form.

In tobacco anginal paroxysms the same general line of treatment will be indicated, modified according to the individual demands of the case.

In the neurotic and hysterical angina, the nitrites, and even morphine, will be called for in the severe forms, while the milder attacks may be controlled by ignatia, Hoffman's anodyne, spirits of camphor, valerian, chlorodyne, aromatic spirits of ammonia, and hot, stimulating drinks, such as whiskey and peppermint water, especially if there is much flatulence.

The following remedies will prove useful in those forms of angina where the symptoms do not demand immediate palliation, that is, where the pain is not so intense and the heart well sustained, and in those which have been termed pseudo.

Spigelia, when the pain in the præcordium is of a lancinating nature.

Cactus grandiflorus may be administered when the pain corresponds to the characteristic cardiac indication of the remedy, namely, vice-like grasp of the heart.

Veratrum album is advocated in vasomotor symptoms, coldness of extremities, and perspiration with intermittent, slow pulse.

Lilium tigrum is also indicated for the constrictive pain. Its sphere of action in the female pelvic organs would seem to point to its utility in those forms of reflex angina depending upon irritation of these organs.

Arsenicum is indicated in forms where the patient can only breathe very gently with the chest bent forward, where the least motion causes complete loss of breath,

and when stitches and pains in the prævordial region are associated with symptoms of great mental distress.

Nux vomica for reflex intestinal forms especially in gouty persons.

Among other remedies are aconite in plethoric persons, aconitine suggested by Hughes and mentioned by Goodno. Kalmia, cuprum, phytolacca, cimicifuga, rhus, valerian, hydrocyanic acid, naja, spongia, argentum nitrate, lobelia, tobaccum, lactuca virosa and oxalic acid.

After subsidence of the paroxysm the patient may, beyond some exhaustion, appear in his former health, or he may, on the other hand, suffer from decided indication of impaired action of the heart. In some instances acute dilatation may result. Even under the most favorable circumstances the patient should remain in bed for several days to a week. In other cases, where the after-effects are marked, cardiac remedies will be called for, such as nitroglycerine, digitalis, cactus, spigelia, and stimulants.

When the paroxysms are easily excited by movement, absolute quiet and rest should be rigidly enforced. Great care should be taken with the diet. The bowels should be kept free.

Treatment During Intervals.—Treatment during the intervals and the treatment after the subsidence of the more immediate consequences of an attack includes those measures which are directed toward the exciting causes, which may be termed preventive, and those which are aimed at the primary ætiological factors.

The history of the patient should receive close scrutiny, and any diathetic tendency carefully noted, such as the presence of gout, syphilis, diabetes, or renal disease. True angina in a person under forty years of age should always excite suspicion of syphilis.

Preventive measures embrace the avoidance of gastro-intestinal disorder, especially flatulency, emotional influence, and undue muscular exertion. At the slightest intimation of gastro-intestinal disturbance the bowels should be relieved by some saline, calomel or vegetable purgative and the tendency to the formation of gas at once combated.

The questions of diet, muscular exertion and mental strain are those which make up the daily routine of life. How then should a person liable to angina live?

Diet is of the utmost importance. Subjects of true angina are very often persons of full habit and hearty appetite which they are inclined to indulge. The amount of food should be cut down and its variety limited to the exclusion of rich and highly seasoned articles and those which favor fermentation. Thus, carbohydrates should be excluded. The dietary usually prescribed for persons of the gouty diathesis will in most instances prove suitable. Stimulants should not be taken except in the case of elderly persons who have long been accustomed to their use, then whisky may be taken with dinner or on retiring.

Exercise must be allowed within certain limitations. Attacks induced by slight muscular exertion on the other hand, call for a period of complete and absolute rest in bed. In other cases the patient should be allowed to walk on the level, but should avoid fatigue. Walking against the wind should be absolutely forbidden, as well as hurrying and rapid walking. All mental strain, worry and anxiety, close application to business should be avoided as much as possible. Likewise any influence which tends to suddenly affect the emotions.

Medical treatment forms an important part of the measures for the prevention of recurrence of the paroxysm. Not that it can remove structural changes in the heart, but its influence tends to check their further progress.

The most important remedies are the iodides of which the iodide of potassium is the most favored. It should be given with a copious draught of water after meals in doses of five to ten grains three times a day. Iodide of sodium and iodide of strontium may be substituted for the potassium. Hydriodic acid in the form of the syrup is another effective way in which to administer iodin, the dose is a drachm which contains one grain of the acid. Iodide of arsenic is a cardinal remedy. The tablet triturates in the second decimal trituration, four times a day, is a suitable form of administration. The tendency of the iodides is not only to check the arterio-sclerosis but to lower the vascular tension.

Arsenic in the form of the triturate, arsenic album, or Fowler's solution is also most valuable.

Nitroglycerine is indicated in conditions where the pulse shows a state of high arterial tension. It may be administered for some time but tolerance is soon established and the dose must be increased. It often acts well immediately after the attack has passed.

The other nitrites are sometimes employed, namely: sodium nitrate and nitric ether; the former is given in from one to two-grain doses, but is not free from danger; the latter is suitable only for the pseudo forms, especially those of neurotic character.

Aurum in the form of the triturate of the metal or the chloride of gold and soda in the second decimal dilution, five or ten drops three times a day, will often prove valuable in retarding sclerotic degenerations of all forms. While especially indicated in arterio-sclerosis of syphilitic origin and in interstitial myocardial changes with symptoms of mental depression it may be also prescribed from a purely pathological standpoint irrespective of the special indications.

In those types of angina of functional or neurotic origin, the causes should be diligently investigated and their removal sought. It is obvious that no special line of treatment can be laid down, as each will present individual peculiarities which will not allow of generalization.

In tobacco angina it is scarcely necessary to say that the use of tobacco should be prohibited.

In the neurasthenic and hysterical forms little medicine should be given and no anodynes. Ignatia, the bromides for a limited period only, the hypophosphites, electricity, massage, the rest cure in a sanitarium and building up of the general health should be the line of treatment followed.

In all instances in both forms of angina, the consideration of the general health is of the utmost importance. Anæmia, general debility and prostration should be met with iron, arsenic, the preparations of cinchona or quinine and strychnine.

—Czarnecki says (*Berl. klin. Woch.; Med. Standard*) that a young girl inserted a metal box, 10 by 4 c.c. in size, into her vagina during her first menstruation to check the flow. She could not remove the box and informed no one of its presence, not even her husband. She subsequently aborted and the box slipped into the uterus. She again became pregnant and before delivery of the child could be accomplished the box had to be removed with forceps. The box had remained in the vagina for thirteen years and eighteen months in the uterus without giving rise to any disturbance or inconvenience.

A STUDY OF GASTRIC ULCER AND RHEUMATISM.

BY J. C. PATTERSON, M.D., PHILADELPHIA.

IN hæmatemesis it is necessary to trust to nature for the control of hemorrhage. If we will stop to consider the rationale of these cases, we see how futile are the remedies that are advised for the bleeding in case of rupture of the veins at the lower end of the œsophagus, and from the mucous membrane of the stomach. How drugs can do much good in these cases is enigmatical. It is hard to see that they can be of much value. Our instincts are to do something, although there is no positive evidence that the efforts will ever do good. Not to fail in case of hemorrhage from the stomach is our aim; but we must first learn to give as few drugs as possible, so that we may irritate the stomach to as small a degree as possible. Again, we should rely upon external applications by relieving or taking off the stress on the stomach, by relying upon rectal feeding and rectal medication.

The antiseptic treatment of ulcers is capable of demonstration, but there are cases in which the cleaning of the viscera is dangerous, especially where the history of the case has been that of an ulcer of the stomach. In these cases pain is a prominent symptom, varying in intensity, and appears a quarter of an hour after the food has been taken, and is increased by pressure over the umbilical and dorsal regions, depending upon the location of the ulcer. Frequent vomiting, with or without blood, occurs in all stages of digestion. The blood varies greatly in quantity, but it is a most important sign when present in any quantity. The size of the ulcer is not as important a symptom as the position, some positions being more constantly exposed to friction than others. There may be stricture from spasm of the pyloric muscle, in which case the vomited matter will be sour and fermented, owing to its having been retained in the stomach for some time. Perforation resulting, and the adhesions forming are not limited, then the contents of the stomach may pass out into the general peritoneal cavity and produce acute general peritonitis.

Surgeons have operated, trying to pick up and isolate the bleeding vessels, but they are frequently unable to find any bleeding point whatever. I have often thought we would have to rely largely upon absolute rest; in fact, upon the use of ice or cold water, if they can be used locally. If used internally they get too warm, and thus fail to be of service. Opium or morphia may be given by the rectum hypodermically to quiet the pain; and astringents my be used if there seems to be a general oozing. Tannic acid is preferable to gallic, as it is more of a styptic; either osmic or sulphuric acid may be given in five-drop doses, for either of them is a very good styptic. I have seen cases in which the ulcer opened right into the arterial vessel, but drugs will not stop hemorrhage in such cases. There are some who believe that large doses of lead, in solution or in powder, had given some relief.

The important indication is to bring about a lowering of blood pressure; for this purpose surgeons may bandage the legs in such a way as to keep the blood in the extremities, and in that way check the hemorrhage. I always want to empty the bowels thoroughly by giving injections of one of the saline salts. Hammamelis is a very good astringent, and it is soothing. Emptying the intestines of their contents has a tendency to attract the blood into other channels. For instance, the attracting of the blood into the portal area will have the benevolent effect of the blood being invited to go in their direction. If not too much vomiting, sulphuric acid may be used. If the patient has been bleeding a great deal for a week or ten days, or every other day, or every third day, or even every second day, or if there has been a discharge of blood by the stools two or three times a day attended with soreness, it is a most anxious case. Anything that is given by the mouth for the vomiting will not do any good; for it will not remain on the stomach, but we cannot absolutely give up any kind or method of medication or feeding. I have explained to the family of the patient or friends the dangers of an operation, as well as the possibilities that the operation might be of advantage; and that it ought to be resorted to. This question has been taken up by surgeons. Death occurs in five cases out of ten, and the question is whether we are going to relieve the case. If the surgeon can go down there and pick up the vessel and tie it at once or cut it out, without danger of the patient dying on his hands, I would say go ahead at once. The patient's life is not imperilled permanently because of the alarming symptoms of hemorrhage, and the hemorrhage has not been going on so far as to be beyond relief from the anæmia and prostration that results thereby. If the hemorrhage is from one of the coronary vessels, some surgeons advise doing it at once; but it is still a matter of doubt whether we ought to do it or not. In one of my patients a hemorrhage may take piace at any time; at another time it may become fatal; it might be relieved, and it might be cured. On taking the averages the recoveries thus far have been rather few.

It is not wise yet to insist upon operating, and I would not do it unless the family insist on it. As to the operation, we leave it to the surgeons, as they are familiar with the technique. The percentage of mortality has been very much lower since 1890 or 1892, when the operation was first done; but we can say to the patient's family that it may do good, it may prolong life; or, possibly, it may cure.

Before introducing the discussion of the question of rheumatism, I wish to say a few words on the subject of therapeutics. Therapeutics must ever be the goal of all medical investigation. The application of remedial agencies to the relief of suffering involves viewing completely the physical and mental constitution of the patient, as well as the accurate knowledge of his vital functions, their relationship to each other, and the indications of their change from a normal condition. On this broad foundation must rest all indications for the use of remedial agents, whether they restore impaired functions or remove organic derangement. Bichat has said, "Life is the totality of those functions which resist death," consequently health is an expression of the harmony of vital manifestations, disease being a change in one or more of those functions. Sound scientific therapeutics requires a minute and accurate judgment, for the phases of functional derangement are often so obscure as to require the most patient investigation. It is hard to decide whether the trouble is local or reflex, specific or sympathetic. Hence, when remedies are claimed as effective in a certain group of symptoms, it is frequently uncertain whether their action has been exerted directly on the damaged organ or reflectively through some other organ or organs. This constitutes one of the great difficulties in determining the therapeutic value of any remedy, the action of which has not been definitely settled. Many agents, in consequence, which are vaunted as endowed with remarkable curative powers are soon discovered by the profession as of no value.

Want of reliability in the agents which are prepared for his use affects the doctor's work. Every medicinal preparation should express the physiological effect of the agent it purports to represent, else no certain and uniform results can be secured, notwithstanding an accurate diagnosis or scientific prescription. For example, observers say calomel is not a cholagogue, yet from my own experience in the use of calomel in torpid liver in thousands of cases, I have no hesitation in stating that it is the most certain, reliable and efficient cholagogue in the materia medica which I can find. Again we must remember that often experiments on dogs and other lower animals are unreliable and delusive as to the action of medicinal agents on the diseased human organism.

A substantial basis in therapeutics is the fact that certain agents exert a specific action on certain organs and tissues. Thus, no class of medicines exert a more salutary effect on the animal economy in a large class of diseases than cathartics. Yet in the administration of so simple a class of remedies which act primarily on the intestines, not only the reflex influence of the agent on the other organs must be judiciously weighed, but the condition of the lining membrane of the bowels must be carefully considered, for, bear in mind, that in relieving overburdened organs in other localities a more formidable trouble may be set up in the gastroenteric tract. Fortunately numerous agents with specific effects on certain organs are known. For example, there are agents which act directly upon the kidneys, whose physiological effects are diametrically opposite. One is mild, soothing and cooling; another is stimulating, heating and harsh. To decide which class is indicated, the pathological condition of the organ must be clearly known. Pathology is the basic principle of all reliable therapeutics. Knowing the pathological condition of a given organ, and its physiological and pathological relation with other organs, will suggest the nature of the remedy required for its relief. Overlooking the true pathological condition and the treatment of disease from that standpoint, means the substitution of epiricism for science, and is a step backward.

For example, many medicines of vegetable origin of inestimable value in the green state, are inert or injurious in a dry state. Many again, which are mild, efficient and reliable in infusion or tincture, are harsh, acrid, nauseous, or otherwise highly objectionable in powder form. The discrepancy between the statements of medical men may often be explained by this therapeutic fact.

This interesting case of mine is a female, aged 20 years, a domestic. Her personal history is negative. Family history shows no disease; probably it is negative, with the exception of one sister who has had rheumatism. In regard to her previous medical history, I would state that she has had the affections of childhood, measles, mumps, diphtheria, typhoid fever at 19 years of age, influenza at 15; no venereal affection as far as known. She was admitted to the hospital this fall with this history: Six days before admission she had a chill, and on the day following attacked the arm and legs, or, rather, the large extremities and joints were painful, the pain being greatest in the right knee and the right wrist; the corresponding joints of the left side being affected to a lesser degree. Later the left thumb was involved, and during this time she had some headache, analgesia and constipation. On admission to the hospital she had these joint symptoms, namely, pain and swelling. She was weak, had no appetite, slight cough, constipated, her temperature was 101.6, her pulse 106. Her blood count showed 4,100,000,000 red cells, hæmoglobin 68 per cent., white cells 90,420. The examination of her nervous system, her lungs and the gastro-intestinal tract was negative; her urine was also negative; a systolic murmur was heard near the apex of the heart.

Since admission there has been an improvement in the joints of the arms and the right leg; her temperature, however, has continued at about 101 as the highest, and 99 as the lowest. The pulse rate has been out of proportion to the temperature, being from 100 to 120; the leucocytes have gradually increased, varying in different counts; one count was 15,000 plus; again it was 11,940; a week later 12,480. There is a vaginal discharge, which has been present for a year. Cultures are negative.

A diagnosis of arthritis, or rheumatism, has been made. Temperature, at first that of rheumatism; was first articular in form, that the inflammatory process has not been fugacious with rest and settled down in the left knee. With this persistently high temperature, she has had a murmur at the apex of the heart, which murmur may be old, or it may be part of this process; but on inquiry you will find she has had heart symptoms ever since she has had typhoid fever. Moreover, the murmur seems to be associated with moderate dilatation, is not changed in character; hence, probably, this is an old lesion. One thing is noted, however, in addition, that there has been a very pronounced vaginal discharge for the past year.

A characteristic of this joint affection or involvement, is an unusual effusion floating in the patella, accompanied with exquisite, constant pain, not only at night, but also in the day, with a marked degree of tenderness. This great involvement of the joint has occurred without much temperature change now within the last forty-eight hours. Two days ago the temperature was 101, and since then it has not been above 100. This does mean not an inflammation as intense as a streptococcus or a staphylococcus infection, or the temperature of the polyarticular rheumatism, or the range we are accustomed to see in that form of inflammatory rheumatism, where the pain flies from one part to the other, and the temperature is high, so as to produce "night sweats." The clinical history seems to be more that which occurs in connection with disease of the vaginal tract. The theoretical problem is of the greatest interest. We thought this was a case of inflammatory rheumatism, with a temperature of 102, which has been the highest, and salicylates have been given, but with no relief. This is against the supposition that it is simple acute articular rheumatism.

Therefore, we will have to resort to other forms of medication and revise the diagnosis, perhaps, in the meantime. The course of the disease, the low temperature, associated with an affection about the, genitalia the involvement of the joints, which is the seat of great swelling and great pain, and so we are brought face to face with this management of the rheumatism.

I do not know of anything more discouraging and more trying than the management of a case of rheumatism. The progress is very slow, the cases usually get well, but it takes a long time. Two or three matters have to be decided which are of great gravity. First, the causation, if possible. If gonorrhœal rheumatism, there is usually some discharge from the urethra, or discharge from the deep urethra, from the prostate glands, or the genito-urinary passages; sometimes in females the tube is involved. Last winter I had a case like this in private practice, in which the bladder and

urethra were irrigated from time to time, and one of my assistants did it for quite a while. When the bladder is affected irrigation is used for the purpose of rendering the urine alkaline. There is no specific drug that we know of, nor any measure that we know of that will neutralize the toxines which are present. There is a rheumatism of the shoulder also at the sacroiliac junction; that of the shoulder got well first, then the other. There is no specific treatment; hence the treatment is symptomatic. Remove the cause as far as possible. Give some anodynes for the pains. It must be done; the pain becomes terrible. Opiates and Dover's powder have been used, morphia hypodermatically. Then with that we give other preparations of opium, and from time to time let up on it, and give chloral for two or three days, until you get the bowels open again and the secretions are revived. Place your patient under hygienic conditions, confined to bed or in their rooms, give proper amount of fresh air, exercise, for they are suffering from a disease which is knocking them out, pain, toxemia, we must contribute to their strength and their nutrition. The diet should be nutritious, easily digested, and cause as little constipation as possible. Milk is the better, because of its effects on the genito-urinary tract; eggs, meats, depending somewhat on the tendency of the patient; also give those vegetables that are easily digested; as a rule discard sweets, not because the disease is rheumatism, as because the sweets are more difficult to digest. Minimize the starches, because they will not neutralize.

Of the tonics, give iron above all others, but look after the constipation, give vegetable salts of iron, as Basham's mixture; also Blaud's pills, and Gude's peptomangan are easily digested and are splendid tonics. Strychnia is a good tonic and stimulant. It is a good way to give a good stimulant right along. Alcohol, in the shape of wines, if the bladder does not contra-indicate it, give a little whiskey in punch or egg-nogg, but not while giving other forms of alcohol, because not easily taken by the stomach. Keep up the strength of the patient; even a good dose of alcohol as a "night-cap," puts the patient to sleep and gives him a good night's rest. The local regimen is the employment of ice, lead water and laudanum, ichthyol. Of the latter, have not seen much of the effects. Ice locally to the knee-joint. Relieve pain by extension on that joint by putting weight on; standing at times, rubbing the surface often gives a great deal of relief. It is not best to keep the extension on all day, but leave it on just a little while; it is a question of pain, of relief. I have been a number of times to see joints like this to decide what was best to be done. It is a serious question. Probably endocarditis may complicate it. If so, treat it according to its character.

I should decide against surgical operations, and only use it for cause. In every case in which I have decided against it, the termination of the case has been satisfactory. I believe now from my experience that if surgical operations do not do good they are not necessary. Therefore, in a knee-joint like this, from the standpoint of a medical man, I would say, let it alone, so far as operating is concerned. Were it a case of abscess in any other part of the body, you would have to get the pus out at once, and use active surgical means to save the life of the patient. With a temperature of 99 plus and pain as the only pronounced symptoms, we can well afford to wait. When other joints are affected, the same measures must be resorted to generally. That is, put in splints, with the splint inside, bandage the point, and put it in fixation; and so with the rest of every joint that may be affected. This case has been here now nearly four weeks, and is not much better than when admitted. It may go on this way for some time. We will use in her case the ice bag, or hot air. Hot air in some cases will do good; it is all right for the young and robust in other ways, but not good for the aged and feeble. It should not be used in the case of a patient over 50 years of age. This case is a good illustration of the sluggish course of the disease, and the difficulties of any kind of treatment. Use that which is a tonic and stimulating to the joints. Remove the cause as much as possible and give rest.

This case also illustrates the fact that you should inspire your patients with all the encouragement possible. The prognosis is good, but the cure is necessarily slow. Do not take chances, still do not allow the patient to become dissatisfied, as they naturally will. Keep him on treatment, varying it as necessary from time to time.

THE TREATMENT OF GOUTY PATIENTS.

BY M. HEINEBERG, M.D., PHILADELPHIA.

THE pathology of gout is yet to be fully explained and undoubtedly the treatment of this disease cannot be fairly rational until the pathological process has been fully studied and explained. It is well known that there is a strong relation between uric acid and gout, but it has never been satisfactorily explained whether this uric acid which is held responsible for the gout comes from increased formation, diminished excretion or both.

Garrod believed that there was no increased formation of uric acid, but rather a diminished excretion, with the result that it accumulated in the blood and the other secretions of the body. This has been confirmed by Pfeiffer, who divided cases of gout into two classes. The first class consisted of those cases which had not sunk into the chronic state, but who experienced acute attacks with intervals of complete health. The second class contained those cases of chronic gout in which were found stiffness of the joints, atheromatous blood vessels and so forth. Pfeiffer found that in gouty patients the quantity of uric acid was less than that of healthy men at the same age. The same fact was true of the urea.

To the practising physician the results are the same. Whether it is due to diminished excretion or increased formation the practical result is that the appearance of uric acid in the blood produces local symptoms which are inflammatory in nature, attacking principally the smaller joints. Of course, it is well known that this is done by the uric acid compounds, for uric acid as such cannot exist in the blood even under the most pathological of conditions. Normally these urates are quadri-urates, but in the pathological condition they are converted into the less soluble bi-urates which make up the blood deposits. Haig, who has done a good deal of work along this line, voices this belief in the following words:

"Then I also noticed that in curing a headache by giving an acid to diminish the excretion of uric acid, I always produced a certain amount of pricking and shooting pain in my joints (generally in those which had been most used on the day in question) and it naturally occurred to me that the uric acid was held back in these joints and produced the pains. The uric acid which had failed to appear in the urine must have gone somewhere. What more natural than to suppose that it had been retained in the joints (where in gout it is

found) and that the pricking pains were the evidence of its presence?"

"Then, on turning to Sir Garrod, I find that he had described precisely similar joint pains as occurring in gouty subjects immediately after the ingestion of beer or wine, and a very little investigation sufficed to prove that all wines and beers are strongly acid, so that a very simple explanation could be given of the facts."

As opposed to these views are some experiments as performed by Pfeiffer which he thinks have been confirmed by clinical experience. He injected under the skin chemically pure crystallized uric acid, dissolved in water with absolutely no immediate results. In the course of eighteen hours, as the uric acid began to be dissolved, he noticed irritation and skin inflammation. He was able to avoid these symptoms if large doses of mineral acids were introduced into the body, by which solution of the uric acid was prevented, while the use of alkalies caused them to set in earlier and with greater intensity. So, also, the symptoms of irritation presented themselves earlier if the injection of uric acid was immediately followed by the introduction of alkaline solutions in the same locality; pain and inflammation present themselves promptly if solutions of uric acid are injected. The results of these experiments are also in accord, says Pfeiffer, with the clinical fact that the tophi of gouty patients are usually painless; often indeed, they form without the knowledge of the patient. Not the precipitated uric acid, therefore, but the dissolved uric acid according to this view must be regarded as the irritating agent. According to an acute attack is the result of a resolution by the blood of previously deposited uric acid, the impulse to this resolution being an increased alkalescence of the blood and body juices, the deposit being the result of diminished alkalescence.

Whether uric acid is an irritant in solution or acts as an irritating precipitant, it is undoubtedly necessary to diminish the amount of uric acid in the blood to relieve or cure the gout. The rational way to do this is first to give the gouty person only such diet as well produce in the economy a minimum amount of uric acid, following this up by giving such remedies as will increase its solubility and elimination.

It is rather a modern notion to place less dependence on the excess of uric acid as causal factor in gout. Magnus Levy has carefully gone over this subject, especially the point of the alkalinity of the blood and the proportion of uric acid. He claims that the assumptions of Garrod are untenable. Levy claims that the quantity of uric acid in the blood during the attack and before it is not increased and the alkalinity of the blood is not diminished. Levy claims that if uric acid is the cause, one must assume local disturbances and local changes in alkalinity. On the other hand, Mordhorst advocates the older theory in a series of careful experiments. Certainly none of the newer therapeutists who dispute or deny the uric acid theory of gout have put up a working hypothesis which takes its place.

The most efficient and most rational treatment is the regulation of the diet. If we can eliminate from the food nitrogenous or albumenous principles which result in urea if complete combustion takes place and in uric acid, if the combustion is incomplete we have won more than half the battle. If these foods are eliminated from the diet, as far as possible, the patient has increased chances for recovery. This includes the so-called "butcher meats," which are beef, veal, mutton, lamb, and fresh and salt pork, and also fish. It also includes the albumen of eggs, and cheeses. The typical foods which are allowed are milk, butter, fresh vegetables and fruits. Oysters and lobsters can be used moderately, and occasionally poultry; rice, potatoes and sugars, are often interdicted by authorities, but there is no reason why they should not be given in reasonable amounts.

There are other exciting causes of gout which are nearly free from nitrogen. These are malt liquors and wines. They contain water, alcohol, and other carbohydrates, but no nitrogen. Although this is true, practical experience has taught us that these drinks are harmful to the person distressed with the gout. Port, Madeira and sherry are famous for their power of producing gout, while the lighter wines, such as clarets, hocks and Moselle wines are supposed not to produce it if taken in moderation. Undoubtedly stout, porter and strong ales, are factors in the production of gout, and there are cases on record in which it is claimed that it has been produced by the use of lager beer. Cider has also been known to produce gout. On the other hand distilled spirits, especially whisky, are almost entirely without effect in producing gout. Why is this? Plainly, the amount of alcohol is not the measure of the effect, for whisky, gin, brandy, and rum all contain more alcohol than any of the wines alluded to. If reference is made to the wines most apt to produce gout it will be found that they are those which contain a considerable quantity of both sugar and alcohol. Such as port, sherry, and Madeira, all of which contain more than 15 per cent. of alcohol and much sugar; also sweet champagnes, containing 11 per cent. alcohol. On the other hand some very sweet wines, as Tokay, Malaga, and the higher sauternes, which contain much sugar, produce gout less rapidly. It would seem that those liquors which contain alcohol in combination with other substances, especially sugar, are potent gout producers, especially where they excite indigestion.

It is probably due to their acidity that alcoholic drinks act as exciting causes. In a similar manner acid fruits, such as oranges, lemons and strawberries, produce similar results, although we frequently meet cases in practice which are prominent exceptions to these rules. In this disease above almost any other we must remember the old adage: "What is one man's meat, is another man's poison."

When it comes to the question of medical treatment of gout, we have two classes of remedies: one of which endeavors to eliminate the offending acids by the kidneys; the other by the bowels.

At the head of these alkalies many authorities place that well known remedy, salicylate of soda. It is not as active in gout as it is in rheumatism, but if given in large doses it has an excellent effect. Following the salicylates come the carbonates, and then the lithium compounds, which are better suited to the chronic than to the acute stages. Five grains of lithia, three or four times a day, well diluted, frequently has an excellent effect.

Another phase of the medical treatment is the use of mineral waters. There are four principal varieties of mineral waters, the alkaline, the saline, the purgative, and the sulphurous. The drinking of "negative waters," simply for their diluent power, is an excellent thing; eight ounces of water taken on going to bed or on rising will frequently completely change the aspect of a dark hued urine with a high specific gravity. According to Tyson the most active mineral waters used in gout are those in which the bicarbonate of sodium and the bicarbonate of calcium are the chief ingredients. Such are the alkaline waters of Vichy,

Evian-les-Bains in Switzerland, Neuenahr, and Fachinglen in Prussia, Contrexeville, and Vittel in the Vosges, and Dax in France.

Other waters possessed of reputation in the treatment of gout in which the quantity of alkaline bicarbonate is smaller, owe this reputation to their combined sulphate, and aperient properties, chiefly due to sodium sulphate and magnesium sulphate, and belong to the second category of remedies for gout. Such are the alkaline waters of Carlsbad and Marienbad in Bohemia, Kronthal, in Nassau and Brides-les-Salins in Savoy. Then there are the saline waters represented by Baden-Baden, Ems, Hamburg, Kissingen, and Ischl, Wiesbaden, and our own Saratoga waters, and those of Bedford, Pa.

Finally there are the bitter acidulated purgative waters Hunyadi Janos and Friederichalle in Hungary, Pulna in Bohemia, and Rubinat in Spain. Sulphurous waters are also of considerable use in gout. Among those in this country are those of Richfield Springs, Sharon and St. Catherine's.

Aperients are not used as freely as they formerly were, but among the eliminating remedies is the well known colchicum, the classical remedy for gout. It was regarded for a long time as a specific in gout as quinine in chills or mercury in syphilis, but its action is now known to be due to its power as a cholagogue. The liver plays a prominent part in uric acid formation and hence the excellent effect of this drug. The following are the best combinations of this drug. Sir Benjamin Brodie recommended and used the acetic extract of colchicum as follows:

℞ Pilulæ hydrargyri
Extracti rhei.
Extracti colocynthidis compositi.....aa gr. xx
Extracti colichi acetici.....gr. xv

M. Make into 15 pills. Sig.: One every 3 hours until relieved.

Dr. Thomas recommends the tincture of colchicum in the following combination:

℞ Liquoris potassæ 3ss
Extracti taraxici 3i
Tincturæ colchici .....ɱx
Syrupi 3i
Aquæ pimentæ, ad.....3x

Sig.: For one dose. After the bowels are thoroughly unloaded, give this mixture three times a day.

The wine of colchicum is with many the favorite prescription. A good combination is the following:

℞ Sodii salicylatis 3iv
Sodii nitratis .....gr. cl.
Potassii iodidi .....gr. cxx
Vini colchici radicis .....ɱxc
Syrupi gaultheriæ .....ʒv

Sig.: A tablespoonful in a half glass of water twice daily for a month.

Many remedies have been tried in gout; the following may suggest something efficient to a physician in a baffling case: Benzoic acid, hydrochloric acid, salicylic acid, sulphurous acid, aconite, alkalies, carbonate, chloride, tartrate and phosphate of ammonium, antipyrin, arnica, arsenic, sulphurous baths, Turkish baths, belladonna, bittersweet, blisters, brine, camphor, carbonic acid water, Carlsbad water, chloral, carbonate and chloride of sodium, cocaine, iodide and nitrate of sodium, cinchona preparations, codeine colchicum, Jamaica dogwood, ether, ginger, guaiac, ichthyol, iodine, iodoform, benzoate, citrate, iodide and carbonate of lithium, liquor potassæ, lupulin, magnesia, manganese, milk, morphine, musk, cajuput oil, cod liver oil, horse chestnut oil, peppermint oil, opium, paraldehyde, piperazin, pine leaves, baths, podophyllin, citrate and iodide of potassium, quinine, rhubarb, rubefacient, nitrate of silver, savine, strychnine, sulphites, sulphur, tobacco, valerian, veratrum viride, Vichy water.

Professor Gross recommended for local relief in this condition:

℞ Tincturæ opii .....ʒi
Linimenti saponis .....ʒij

Sig.: To be rubbed in twice a day and constantly kept in contact with the affected joint by means of a piece of flannel covered with oiled silk.

In gout, with nervous symptoms, the following prescription has been tried with good effect:

℞ Extracti aconiti fluidi.....3ss
Extracti valerianæ fluidi.....ʒss
Liquoris ammoniæ acetatis.....ʒi
Syrupi .....ʒss
Aquæ .....ʒiv

Sig.: Two tablespoonfuls every two hours:

In irregular gout, with palpitation and a full pulse:

℞ Potassii citratis 3ij
Tincturæ stramonii 3i
Tincturæ colchici seminis.....3ij
Infusi digitalis .....ʒiij
Aquæ menthæ piperatæ.....ʒviij

Sig.: One-sixth part three times a day.

When the gout shows a tendency to become chronic, the following prescription often acts well:

℞ Lithii carbonatis 3iss
Potassii iodidi 3iiiss
Pulveris gumi arabicæ.....gr. xxij
Extracti gentianæ .....gr. lx

M. For ten pills, one with each meal.

When fever and pain exist with the gout, try the following:

℞ Morphinæ sulphatis .....gr. ij
Tincturæ aconiti radicis.....3i
Antimonii et potassæ tartratis.....gr. i.
Syrupi .....ʒiss
Aquæ .....ʒiss

Sig.: A teaspoonful every three hours.

There are many anomalous cases of gout met with; one of the most instructive to me has been a case of gout which came to me from a family famous for its gouty history. The patient was a woman thirty-five years of age who had been treated classically for gout; she had all the clinical picture of gout but was not getting well. She was wretchedly weak and emaciated. I placed her on "butcher meats" again for she craved them terribly and stopped her gouty treatment. She began to pick up at once; the meats taken in moderation did her worlds of good, while the use of large quantities of water containing boric acid was the only medicine. It helped her symptoms, cleared up a cystitis she was troubled with and made her a well woman. She has tried this diet now for two years and is better than for many years. So every case must be studied and not left to hard and fast rules, the guide to treatment being the improvement noted. The dress in gouty patients must be carefully watched; the patient should dress warmly and carefully in winter and even in summer should take great care to protect himself or herself from changes of weather or temperature.

PARESIS FOLLOWING TYPHOID FEVER, WITH DISCUSSION.*

BY LOUIS FRANK, M.D., LOUISVILLE, KY.

THIS young man was sent to me three weeks ago, giving the history of typhoid fever dating from about the first of August. He was confined to his bed four weeks. There was no unusual complication noted during the illness. Ten days after he got out of bed and began to walk, he found he was lame, that he could not properly use his left foot. He had suffered little pain in the anterior part of the leg just before or during the last few days he was in bed. After he got up and attempted to walk, he had some pain in the instep over the dorsum of the foot. He shows some distinct paralysis of the foot, there being paralysis of the perineus muscle, and of the extensor longus digitorum, and I looked upon it as a case of probable anterior poliomyelitis following typhoid fever, which we know sometimes occurs, although he has had no marked pain along the course of the nerve. I made a test with the Faradic current, and found absolutely no reaction. Having no galvanic current, I advised him to go to Dr. Moren, who examined him and found typical reaction of degeneration under the galvanic battery. Dr. Moren made the diagnosis of neuritis of the anterior tibial nerve, and, while I think probably he is right, I looked upon the case as one of anterior polio-myelitis. Thinking the case was one of more than usual interest, I had the boy come before us to-night. I gave him a grave prognosis, which I believe will hold good, even if it is a case of neuritis following typhoid fever rather than polio-myelitis. There is five-eighths of an inch difference in the circumference of the two legs. Since he has been out of bed, now about four weeks, there has been some slight improvement in muscular power.

Dr. J. B. Marvin: I take it that this is a case of peripheral neuritis post-typhoidal in character. The anterior tibial muscles are affected. The knee reflex is markedly exaggerated. He has the foot drop and typical history of neuritis and not polio-myelitis. Polio-myelitis anterior acuta is a comparatively rare trouble in adults; we see it most frequently in children, and it is always as a rule a bilateral trouble. More than one set of muscles are always affected, the trouble is always more marked at first, or at the onset, than it is each succeeding week. There is always improvement up to a certain point in polio-myelitis. This young man gives no history of trouble anywhere else except in this foot, and it is the anterior muscles which are affected. In polio-myelitis you have two other symptoms which are not present here, viz: absence of the reflexes and ligamentous relaxation, increasing, of course, with the duration of the trouble, and this gives you all the curious deformities of clubfoot, trouble about the shoulder, leg, etc. The foot drop, increased reflex, the limited extent of the trouble is unquestionably positive proof of its being neuritis rather than a central trouble. The absence of marked pain, which Dr. Frank seems to lay considerable stress upon, would not cut much figure. You may have a neuritis with very little pain; some are extremely painful, others are not. And I do not know exactly why he takes the ground that the prognosis is so much more serious in neuritis than in polio-myelitis further than the point I spoke of a moment ago, that there is always improvement up to a certain point in poliomyelitis. Of course neuritis is not a pleasant thing to have, and this young man will always have a toe drop, but it is almost too soon to say that he is hopelessly crippled.

Dr. J. A. Ouchterlony: I agree with Dr. Marvin, except that I have seen a good many cases of this kind where the disease was unilateral at first and did not become bilateral—did not attack the opposite side—until somewhat later, and while I did not hear exactly the date when the trouble began in the case reported, I gather from the remarks made that it was comparatively recent, so I would hardly expect to find much ligamentous relaxation as yet.

I have happened to come across a case this summer that in some respects reminds me of this. A gentleman had an attack of typhoid fever, and, after recovering, developed a localized neuritis, and it was much worse than the case before us. Strange to say, after a while gangrene set up in the big toe, the tibialis anticus was completely degenerated and became almost entirely atrophied. Of course we know that gangrene sometimes follows typhoid fever, but I have not seen the combination of neuritis and gangrene in the same patient and at the same time except in this instance.

Dr. F. C. Wilson: I think this is a case of neuritis following typhoid fever. I would not look upon the prognosis in the grave light expressed by Doctor Frank. I can recall cases of multiple neuritis following severe attacks of typhoid fever which recovered completely. While the condition lasted for eight or ten months after the typhoid fever, recovery was finally complete.

Dr. A. M. Vance: I saw this case in consultation with Dr. Frank and Dr. Moren. I agree with the other speakers that it is a case of neuritis. I rose particularly to speak to the discussion made by Dr. Marvin. I do not agree with him that infantile paralysis is always bilateral, nor do I agree with him that all these cases improve up to a certain point; many cases never improve in the least. I am sure that primarily one muscle may be involved, as well as one extremity; I have seen the deltoid involved on one side without any other muscle having shown any weakness. So I think he is wrong that improvement always occurs, that it is always bilateral and cannot attack even a single fibre of a muscle, as well as one muscle or all the muscles of a limb. Degeneration is marked in all the muscles of the limb sometimes; I have amputated them where there was not a single red muscle fibre remaining.

Dr. J. B. Marvin: I think Dr. Vance took my statement a little too literally; I meant that as a general principle polio-myelitis is an inflammation destructive in character, involving the motor cells in the anterior horns of the cord and in the vast majority of cases it is a bilateral trouble. Certainly, I am borne out by every authority on neurology that the disease is far more marked at the onset than it is afterwards, and you may have, from the collateral congestion, engorgement and inflammatory products poured out, much more marked paralysis at the beginning than afterwards. While all the muscles of the limb may be involved, yet the general fact is beyond dispute if the case is traced back to the beginning, we will find a history of other muscles having been affected and improvement has taken place because of collateral circulation being re-established, the congestion having disappeared, leaving only those muscles permanently paralyzed which were supplied by nerves coming from the cells in the anterior horns which were destroyed.

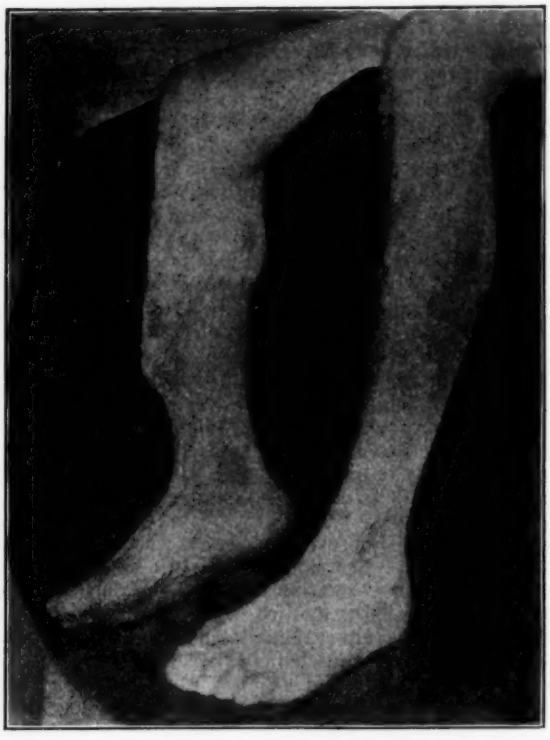
*Reported to the Louisville Medico-Chirurgical Society.

—A writer in the *Lancet* recommends strawberries, grapes, figs and tomatoes in the treatment of chronic dysentery. The most satisfactory results are claimed.

OLD OVER-RIDING FRACTURE OF TIBIA AND FIBULA.

BY H. O. SOMMER, M.D., WASHINGTON, D. C.

THE photograph shows a very marked case of over-riding fracture of the tibia, which I publish as one of the curios of the medical junk-shops. The patient, an Italian,* was some years ago, but judging from the uniform size of the limbs, after maturity, injured in a quarry accident in his native Italy. In the absence of an interpreter much more could not be ascertained, though he claimed some sort of medical attention had been received. Judging from the patient's present disposition, either some rural Italian "skill" was "incurred," or his aversion for medical solicitude was so great then, that he preferred to go through the world dropping his pelvis at each step on the right



side more than five inches, since the shortening being due not to over-riding alone but to the extreme obliquity of the lower fragment to the axis of the upper towards the rear, and also toward the left, necessitating his walking on the outer edge of the foot, made the total shortening more than the over-riding alone warranted. Skin signs of there having been an open fracture, with loss of fragments making shortening, etc., perhaps justifiable, were not visible. Union was absolutely firm, so that the patient was content to hobble about as he was. Queer state of bones and happiness.

—Harry Eggerts, of Newark, N. J., is but 3½ years old and weighs 155 pounds. He has a baby sister who is but 21 months old and weighs 92 pounds. The boy is as tall as an ordinary child of 6 years and is bright and active.

* Metropolitan Hospital, N. Y.

THE CLINIQUE.

PYO-PNEUMO-THORAX.

CASE I. I showed you this man, or boy, two weeks ago, and I want you to see him again. He is an Italian, sixteen years of age, and was admitted to the hospital on January 9th. There is nothing in the family history that has to do with the case. December, after exposure to cold, he was taken with He says that he was never sick before. On the 23rd of pain in the right shoulder; he had an occasional cough, with some mucous expectoration, and his appetite was poor; he was weak, so that he wanted to lie down. He was in this condition until a week before he came to the hospital. Suddenly he had a violent attack of dyspnea; he had fever and diarrhea, spit a mouthful of fresh blood, and has had nosebleed. He has been only a short time in this country.

Now this man was shown to you by Dr. Da Costa on the 14th of January, as a case of pneumo-thorax in the right pleural cavity. He had the coin sign and the other signs of pneumo-thorax. When I took charge of the ward, on the first of February, I began in a few days to suspect empyema, which is not an uncommon sequence of pneumo-thorax. I brought him in, intending to advise that he be operated on. When I had examined him the day before he had had flatness over the posterior part of his chest. There was an intense tympanitic resonance over the upper part on the right side. But when I percussed him on Wednesday there was movable dulness, showing that there was fluid in the pleural sac. When he lay on his back, the back of his chest was full of fluid, and there was tympany in front. Then, when he sat up the tympanitic note changed to dulness. So a change had taken place between Tuesday and Wednesday, and I said that I had some doubt on the question. When I examined him subsequently, though, I was struck by the way the intercostal spaces on the right side were filled up. When you ran your fingers over the left side of the chest, it was like running your fingers over a washboard; but on the other side it was not so. Then when he sat up, the right side looked larger and fuller than the left. So I determined I would take the chances and have him operated on, if I could get the consent of his friends. There was some delay about this, as his friends did not agree; but it was finally done last Wednesday.

Now, I have talked to you before about operations, especially abdominal operations, and I have expressed my doubt about the wisdom of a great many of the exploratory operations. If you are operating for some distinct and definite purpose and will be sure to reach something, your operation is much more likely to be a success. But it is very different in an exploratory operation. The best that can be done is to make an opening, perhaps two inches or two and a half inches long, and the surgeon puts his fingers in and fishes around for something, and he don't get very far. If the thing comes to a post-mortem, when we can take the things apart and look at them and don't have to put them back again even, it often takes as much as two hours to find out what is the matter. So these exploratory operations are not very successful. But here you see is a case where we are going to cut a hole and let out pus; then it is a different matter. There is no reason why he should not get well afterwards, and I feel I can urge, and have a right to urge, these more than the uncertain exploratory operations.

We used to use in these cases the aspiratory needle

for removing pus. That was not very successful, for the pus was apt to accumulate again, and then a greater reason, frequently you got no pus from the aspiration, because you stuck the needle in the wrong place, and sometimes the pus was too thick to run through. It was not successful because it was like an exploratory operation. Nowadays it is rather the custom to open the pleural with an incision and let out the pus. It is said that air will get in. But there is no objection to the admission of air. It will get in anyway and we have learned that there is no great injury done by the admission of air.

In the older times, if aspiration was not successful, we used to have a long, sharp hook and thrust it in between two ribs, underneath around two ribs and out again, then passing a drainage tube back in this way. This was more satisfactory, but we could not always get the pus out.

This man had two quarts of pus removed from his thorax. You see by this chart that there was a constant fever. He was never without fever until the operation was done; then, within twenty-four hours, the temperature went down and has been in the neighborhood of normal ever since. The intercostal interspaces are no longer filled out as they were. There is about three or four inches of drainage-tube in his pleural sac so that we can obtain free drainage. I will turn him on one side and see if any pus comes out. There is, as you see, a small quantity. Now you must watch this drainage-tube; for if the safety-pin should slip, it would fall into the pleural cavity and we should have to operate for it. That opening is in the fourth interspace in the anterior axillary line.

I want to say one thing more in regard to this operation; and that is, when you do have to perform it, do not make your incision too low down. Some years ago we were always told to make this opening low down, between the eighth and ninth ribs and in the back, in order to have free drainage, and a wound that would readily close up. You don't want it too low down or in the back. The discharge will be better and the recovery better the other way, and I'll tell you why. I once had a patient who had been operated on for pus. I found a drainage-tube that had been passed in around two ribs in the way that I told you of. The resident physician thought it was not draining well and was perpetually asking me to get the surgeon to make an opening lower down, but somehow I felt that it ought not to be made low down. Finally the patient died; I did not know why. We made a post-mortem examination, and we found out it was because the opening was already so low down the pus could not get out. If you stop and study over your anatomy, you know the diaphragm rises up so that the lower portion of the pleural sac is wedge-shaped and narrow. When there is pus in the lower part, it widens. But when the pus is removed these two surfaces, the diaphragmatic surface of the pleura and the parietal surface come together and adhere. So I found the tube below the pus; the two surfaces had healed together and shut off the drainage-tube. This taught me a lesson. I asked the surgeon to make this opening high. Then you can never tell what condition of adhesion of the lungs there is. The pus has a curious trick of getting high in the chest, and when an empyema opens itself you will find that it opens pretty well up, and in front.

The likelihood of this man's recovery is good. I think he will get well; the object is a definite one and within your reach, therefore, the operation is a success.

Case II. Pleuro-Pneumonia. This man is forty years old, he was admitted into the hospital February 26th, three days ago. There is nothing in the family history bearing on the case, and he had none of the diseases of childhood. He has had syphilis and rheumatism, and seems to have recovered. He had typho-malaria after being in Brazil. For the past six weeks he has had a cough. I should say that he is a sailor on a tugboat on the Delaware River. His cough is not severe but hacking. Subsequently he has confessed that he had been subject to a good deal of cough during the last three winters. For the last six weeks then, he has had some cough and some expectoration. Fourteen days ago he was much exposed at the time of the blizzard. He went out to shovel snow, but he was fairly well until six days ago when he was taken with a chill and vomiting; he was up again the next day, but had a chill again in the latter part of the day. He has had blood-stained expectoration, and has been constipated. He was admitted on Sunday, having had a chill on Saturday. The result of urinalysis is negative, neither albumin, nor sugar, nor casts being present. The temperature when he was admitted was 102⅘° F., since then it has been up to 103⅗°. It has been up and down, never very high; this morning it was 101⅕°, not excessive, but continuous.

The indications of his history are plain enough that the man has taken some kind of cold. The respirations have been somewhat rapid. There must be some disorder of the lungs under this condition. I told you we have two methods of getting evidence in examination. The indications of the history are sufficiently clear, and the next thing is to make a physical examination.

The heart is quite negative; there is no increase in the force of the beat and there are no murmurs. He seems to be somewhat thick through. It is curious how the chest becomes barrel-shaped in people that have had a chronic cough. He is somewhat thick, but not extraordinarily so. There is complete dulness under the left clavicle. When I percussed a few days ago there was a high-pitched tympanitic note there. There is not movable dulness there. On sitting up it is quite dull, almost flat. The sounds on the right side are not the same as those on the left, and there is almost total absence of the normal sounds. What breathing there is, is quite harsh. The vocal fremitus is weak, the vocal resonance is weak also. There is no bronchial breathing. On the left side in the back, there is a general impairment of the percussion resonance, and it is a peculiar fact that the dulness is greater, I think, over the upper portion than it is over the lower. I cannot say that I think the left side is any fuller than the right, nor that there is any filling out of the intercostal interspaces. One thing more I want to call your attention to before he goes out. When I feel the pulse in his right arm, it gives me the impression of a rather high tension character. The left pulse has not the high tension character. When I feel carefully, I feel on the right side a tube somewhat stiffened under my fingers, and on the left side the artery is gone when I squeeze it, and I don't feel anything. You can understand that if you had a tube whose walls were made of paper, you would squeeze it and you could find nothing.

There is the question then of diagnosis, and the question of prognosis and most important of all the question of treatment. When he first came in this man did not seem so sick as he did the next day. When I set him up to examine him, he became breathless, he became blue, and sweated more. He is much better now in that respect. There is not one of you here, unless he knows more than he gets from the text-books

about it. There is dulness, there is weakness of the vocal resonance though it has not gone, there is almost entire absence of the vocal fremitus, but no crepitant râles. In pleurisy with effusion, the vocal resonance is diminished and, there is flatness on percussion. In pneumonia you have an increase of vocal fremitus and vocal resonance both, and bronchial breathing and crepitant râles. So that is ruled out. What have we here then? I think we have a mixture of the two, a pleuro-pneumonia. He has spit bood, so there is something wrong on the inside of his lungs, as well as outside in the sac. I think it is a case of pleuro-pneumonia, with liquid effusion into the chest. Now in pleurisy, as you see it described in your text-books, there is dulness on percussion, there is absence of vocal fremitus and vocal resonance and the breath-sounds. But you don't often see a case of pure pleurisy, like that, and you do often see the mixed cases. This man has had chronic cough lasting three winters.

What are we going to do for him? Shall we operate as we did with the other patient? No. The patient is improving, and we can go on the principle of "let well enough alone." If this liquid is serous as it probably is, he will probably be better off without the operation. The serous effusion might be turned into pus if I operated on it. These cases will generally improve and get well if you allow them time. If the man gets worse and has a hectic temperature, then the chest ought to be opened and the pus let out. But so long as it is serous in character, I think it is better not to interfere, and prefer to let him get well himself under medical management. I showed you once a little Jewess whose chest was pretty full, and the symptoms more urgent and the likelihood of pus greater than in this case, but I thought we had better let her alone and she got well.

In the treatment I consider that the first thing is to keep the patient in bed, rest of every kind he should have, then give liquid food. This man has been hava pint of beef tea and three pints of milk in the twenty-four hours. Then he has had carbonate of ammonia and opium, and one-half ounce of whiskey every four hours. His back was cupped. This man is better now although his physical signs are worse. I don't think I will keep up the whiskey longer. The opium was given for his distress and pain; the carbonate of ammonia on account of its beneficial effects in pneumonia.

I think this man will get well.

Case III. Stiffening of Arteries in a Young Man.—This patient is a young man of twenty-five. There is nothing in the family history of importance. He has had no previous illness except some specific trouble a year and a half ago, which seems to have no bearing on the present condition. He felt well until January 1st when he had the grippe; then he was better and went back to work till ten days before coming here. Then, after drinking beer, he was taken with pain in his chest, pain in the lower part of his abdomen and in the lumbar region, and vomiting. There was no cough. The temperature was subnormal. It is a curious case. He has an exceedingly intermittent heart, so irregular that it is difficult to count the pulse. It does not beat tumultuously, but with great irregularity.

When I feel his pulse on the right side it distinctly gives the impression of a high tension. When I feel on the other side the high tension is very much less. Now, you may say I am a poor diagnostician and cannot tell the difference between a high tension pulse and stiffened arteries. Many physicians do make that mistake. We might feel the pulse on the right side and say he has a high tension and give him something to lower the blood-pressure. Or we might feel the pulse on the other side and give something to build him up. There is a great deal of stress laid on the importance of this sign nowadays. Don't ever make up your mind about the pulse until you feel it on both sides. This condition is not one of too much blood pressure, but a condition of the arteries. If I were in this condition I should think myself most unfortunate if I were to fall into the hands of any physician who would bleed me.

There is no evidence of any enlargement of the heart, there are no murmurs. There is no evidence except the intermittence of the beat and the condition of the pulse. The heart is exceedingly irregular when he is lying down, but the moment he sits up it is perfectly regular. The same thing happened when we examined him yesterday.

Sir James Paget says that irregularity of heart action is no reason why a man should be refused by an insurance company. But when with this irregularity he has pain in his back, and is in such a condition that he is content to lie on his back and take nothing but liquid food, there is something more in the matter. When a young man, only twenty-five, has stiffening of his arteries, it means there is something wrong going on. What is that man's future? He is old before his time, because he is doomed to drop early or because of some change brought about by syphilis, we do not know. At any rate he has already in his body the processes belonging to old age. If he were well to do and could take care of himself he might live for a long time. What we can do for him now is to put him on his back, and give him liquid diet as we did with the other man—one pint of beef-tea and three pints of milk a day. Then five minims of the tincture of digitalis three times a day with tincture of chloride of iron. This condition may improve and he will go back to his work. In cases like this, digitalis will go a long way, and this with the tincture of chloride of iron and the rest of his treatment is likely to make the man entirely well so far as his present condition is concerned. But as to what the condition of old age will do for him no one can say.

Case IV.—Serous Pleurisy.

The next case is one I intended to bring in later, but as she is somewhat uncomfortable we will bring her in first. Annie H., twenty years of age, a dressmaker by occupation, was admitted November 24th. She was born in Philadelphia and is married. Her family history is to the effect that her brothers and sisters are living and in good health. She had some pulmonary trouble she states, at twelve or thirteen. She menstruated at sixteen, at eighteen she married, but has had no children. She has generally enjoyed good health.

She had an attack of pain in the right side and in the breast, which gradually extended over the whole side. She had cough, but no expectoration. Her temperature has never been high, there is no history of a chill or of a sudden rise of temperature. On admission it was 100⅘° which is very slight fever. You'll often see that low temperature on admission in cases which soon after have quite a high temperature. But although this woman's temperature did rise it didn't go high. It went up to 101⅖° and that is the highest point it has reached. The pulse on admission was 135, then as the temperature rose the pulse descended to about 105 and since then it has never been higher than 116. It is stated that on examination of the lungs fine râles were heard, resembling the crepitation of pneumonia. I have seen the patient once, and it seemed to

me that the principal trouble now was on the left side, of which she has made no complaint. Crepitant râles on the right are entirely absent now; but on the right and more prominently on the left is to be heard distant bronchial breathing. On the left I got a much greater degree of dulness than on the right. This is a typical example of bronchial breathing, heard only on expiration.

I believe that in this case and especially on the left side the preponderating affection is pleurisy. I think the pleurisy here has been primary throughout and that it is bilateral. The clinical history does not bear out any idea of pneumonia. She feels as if she could sit up; they often do in pleurisy. A strong, sometimes healthy-looking, young man will come for treatment when there is absolute flatness on the left side and the apex-beat on the right; and there is no complaint of any serious illness. They may be somewhat weak and short of breath and that is all the complaint we could get out of them.

Of course you should have your patient sit up and make a prolonged examination. Often they are too weak for that. Ih this case there is behind perfect flatness on the left side very high up—all the way up; and there is not that tympanitic sound that you sometimes get. It seems as if the chest were full of fluid. If there is fluid I think it ought to be removed. The question is, what is the nature of the fluid. It has been said by Baccelli that the whispered voice can be heard through a serous fluid but not through a purulent one, and this is called Baccelli's sign. He is such a great man, his authority is so great, that this is spoken of in all the text-books. But the sign is by no means infallible. The whispered voice is often heard over a purulent effusion, and in some cases of serous effusion it is not heard. It is said also that in purulent pleurisy the skin over the affected area is edematous; but this is also fallacious. I think that in a case not preceded by infection the effusion is apt to be serous. In children where there is pneumonia, it is apt to be purulent.

The medical treatment of these cases is not very satisfactory. I would not like to give to a patient of this physical caliber the dose of salts after the manner recommended by some—a half ounce of Epsom salt in as little water as will dissolve it. It will lead to absorption of the fluid, but care must be taken in giving it. Diuretics I don't think do much good, but we give them; iodide of potassium is constantly given. But after all the indication is to remove the fluid by paracentesis of the thorax.

One organism that gives rise to pleurisy is the tubercle bacillus. It is contended by some that nearly all cases of pleurisy are from tuberculosis. If they are, they are not nearly all fatal. If the fluid is found to be sterile it is said to be probably tubercular, because it is hard to find the tubercle bacillus in the effusion, and it is easy to find the other pathogenic micro-organisms. So in purulent pleurisy especially, you should suspect tuberculosis.

The process of tapping the thorax sometimes irritates the pleura and excites a cough, but you should stop when the cough begins. A good rule is to give at the beginning of aspiration or at its close a hypodermic of morphia. The vessels being suddenly relieved of pressure, begin to pour out fluid until the patient is exhausted.

I don't believe there is a vast amount of fluid here because of the bronchial breathing. I have removed as much as one hundred and ten ounces in one case, but in such an effusion there is no bronchial breathing. Here I should not think the layer of fluid between the lungs and the chest was more than an inch or so in thickness.

I should recommend counterirritation as with blisters and iodine; and even if the case is tuberculous, there is no reason why she shouldn't get well.

Case V.—Iron an Intestinal Antiseptic.

Here is a patient who has complained of pain in the bowels and of diarrhea since September 15th. There have been ten or twelve stools a day, dark brown in color, with a bad odor. She has had no period since October and had a miscarriage a year ago.

Careful palpation of the abdomen has not elicited any enlargement of the mesenteric glands which would accompany tubercle. The glands sometimes enlarge enormously. There is no tenderness in the abdomen. There is a soft blowing murmur at the mid-sternum. The lungs are clear, the spleen is not enlarged. The tongue is pale and the skin is pale. I am sure this murmur is an anemic one. I can hear it continuously and quite distinctly over the sternum.

This condition may be due to a diarrhea where the regulation of diet would cure her. Such a case will often be cured when you have despaired of doing so, by using drugs that you would hardly think of using. There are drugs in the pharmacopea we are apt to forget while others are being constantly brought before us. Sulphate of copper and tannic acid are good in some of these cases. Thymol is an excellent thing, though we are not apt to forget it. These are antiseptics. One of the best intestinal antiseptics in my opinion is iron. I believe it is in this way that iron often acts in chronic diarrhea. Liquor ferri nitrates is an old remedy.

Remember that iron is an excellent thing in these cases. It is good for the anemia and it acts, I believe, as an intestinal antiseptic, though I can't prove it. I would try it here. Sulphate of copper and tannic acid are both good, and I will say that this preparation of tannic acid called tannogen is good.

Case VI.—Purpura Hemorrhagica.

This patient is spitting blood, not coughing blood, which is what we usually understand by hemoptysis. The gums are oozing blood all the time; there was about a pint of it yesterday, mixed with saliva. One condition which we would suspect here is hemophilia. At one time hemophilia was supposed to be more common among Jews; but if we take into consideration the traumatisms to which they are subjected in their religious rituals, the disease probably exists no more among them than among others.

One objection to the view of this being hemophilia is in the sex of the patient, as it is more frequent in males. A curious fact about these people is that they are prolific, their families are larger than those of non-bleeders. Occasionally, however, you see it in females, the ratio being about one to thirteen, compared to men.

I think the diagnosis fluctuates between hemophilia and purpura hemorrhagica. You can tell purpura hemorrhagica better by remembering that there are three forms; purpura simplex, where there are great blotches of hemorrhagic extravasation, then purpura rheumatica, and purpura hemorrhagica. Osler's division is more difficult to remember, though perhaps more accurate.

Now what are we to do for this patient? We cannot get a history of hemophilia among her ancestors. This is the most hereditary of all diseases. It should be traced back for several generations. There was a family of bleeders in Switzerland dating back to 1640. They are extinct now because the women of the family finally resolved not to marry and propagate the kind. I think their resolve was a mistake from a scientific

standpoint. We might make an exploratory incision here for diagnostic purposes, and regret it afterwards if we had tender consciences.

I think it is pupura hemorrhagica, and a case for the use of astringents of various kinds. One that is highly recommended is calcium chloride. If you use it get a pure preparation. For children it can be given in a little syrup three or four times a day. Arsenic is another drug that has been highly recommended, and there are some others. It has been stated that washing the mouth out with a solution of gelatin is of help. Of course tannic and gallic acid may be given internally.

Case VII.—Treatment of Senile Gangrene.

We have here a case of senile gangrene in a woman of sixty-five. We can do nothing for it except in a palliative way, with nutritious diet and dressings. The woman could not stand an amputation. Nothing in the way of dressing is so efficient for necrotic soft parts as plaster of Paris. It is sterile, and on account of its affinity for water it keeps the gangrenous parts dry. We sterilize the plaster of Paris again before using.

The question of operative interference in these cases is one of great interest and importance. Senile gangrene is not usually amenable to operative treatment. I remember the case of a man of sixty years who had atheromatous vessels. He was out sleiging on a cold night and both feet were frostbitten. He was brought to the Episcopal Hospital with gangrenous feet. Both of his legs were amputated and finally healed up satisfactorily. That case was half way between frostbite and senile gangrene.

Case VIII.—Necrosis of Tibia.

This is a boy on whom I operated for necrosis of the tibia. I bring him in now in order to demonstrate the suitable dressing for a deep cavity of that soil. If the edges of the ulcer are relieved, the granulations will rise up to the level of the cicatricial skin. If the ulcer is unsupported the result is proud flesh. Therefore strapping is applicable. A delicate layer of gauze is laid in to fill out the little space under the straps.

In applying the adhesive straps you should observe one important rule. If you make tension on the upper and lower borders of the strap alike, then when you come to apply your next strap above, you have a puckering. Therefore put tension on the upper border alone and when the next straps are applied you will have a smooth, even bandage.

Adhesive plaster is sufficiently sterilized by temperature enough to melt it. The heat should be just enough to melt it on the surface, not enough to show the resin on the under side. The dressing is left on for two days.

Is Bleeding of Real Therapeutic Value?

The harm done both to patients and the reputation of physicians by venesection when it was so extensively used a hundred years ago can never be known. The reaction against its use was undoubtedly justifiable. But this prejudice should have worn away by this time, and "bleeding" should be practically studied to see what there is in it of value in certain selected cases.

When Dr. Benjamin Rush relates that he bled cases of consumption until they fainted, we shudder, but possibly he selected the wrong class of cases. It was the custom to bleed every one in the spring in those days. Heavy food, overeating, the use of old port and heavy liquors together with inactivity of the body during the winter, might induce a condition where effete material must have accumulated in the system engorging the secretory and excretory organs. It would seem in these people that the loss of a few ounces of blood from the arm could not be hurtful, while the relative emptiness of the vein for a short time, combined with the mild hydremia that followed the loss of blood, could not fail to aid in ridding the body of noxious material. Nowadays we strive for the same result by the serous outflow from the intestinal vessels produced by saline laxatives.

Excellent results from bleeding the overfed does not mean that the same procedure in the case of powerful men with acute disease will be successful. Here, as a rule, the strong, bounding pulse results from either systemic poisoning by disease products, from the increased temperature, or from the increased cardiac force called forth by some circulatory obstruction. It is not the result of overstimulation of the walls of the arterioles by retained excrementitious products as in the case of the overfed individual after a winter of sedentary life, with overindulgence in nitrogenous food and alcoholic beverages. The bleeding in these cases may, indeed, soften the pulse, but it does not by any means get at the root of the trouble, either directly or indirectly. From bleeding in acute disease in strong men, who recovered in spite of the procedure, to bleeding in all forms of acute illness was a possibly not unnatural step. The fallacy of this reasoning is, of course, now known to us.

Some years ago a number of cases of thermic fever were admitted to the hospital, of whom the majority were robust men in middle life, who were suddenly stricken down. In these cases the pulse was not perceptible at the wrist. This weakness of the pulse frequently remained after the reduction of temperature by the external application of cold and the free use of all cardiac stimulants; and in some cases was one of the most striking signs of danger. The indication seemed to be to empty the distended venous system of a part of its load by removing some of the blood that was obstructing those vessels. Acting upon this view the median cephalic vein of one of the cases was opened with the result that, as the almost blackish blood issued in a thick stream, the pulse at the wrist became perceptible, then fuller, and finally of quite fair volume, with a general clearing up of the intense cyanosis of the whole surface and some lessening of coma. A weak pulse might at times actually indicate the advisability of bleeding; contrary to the old opinion of bleeding was only to be employed in cases with sthenic pulse.

A Simple Rule for Estimating the Amount of Solids in the Urine.—Says Dr. L. Duncan Bulkley, in the *Journal of Cutaneous and Genito-Urinary Diseases*, "Multiply the last two figures of the specific gravity of the urine by the number of ounces voided in twenty-four hours, and add ten per cent. to the product. Thus, if the amount passed in twenty-four hours was thirty-six ounces, and the specific gravity 1021, it would be $36 \times 21 = 750 + 10$ per cent. $= 831$, the number of grains of solids in the whole amount. By comparing this with the table it can readily be ascertained if the amount is above or below the normal standard for the body weight of any patient," This method is Haine's modification of Basser's.

—"Some years ago," said Bishop Potter, in a recent speech, "I was traveling in Minnesota. A man approached me on the railway platform and scanned my features closely. 'Excuse me,' he said, finally, 'but haven't I seen your picture in the papers?' I was compelled to confess that he might have done so. 'I thought so,' continued the inquisitive one. 'May I ask what you were cured of?'

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"More servants wait on man than he'll take notice of."—GEORGE HERBERT.

TUBERCULOSIS HOSPITAL.

THE light which has been cast within the past few years upon tuberculosis, and many of those diseases which had hitherto, to a certain extent, baffled human skill, through the investigation of germ life in its causes, development and action upon the human economy has opened a field of successful work, which bids fair to revolutionize scientific investigation in the study and prevention of disease. In no department of our profession has this line of study accomplished more, and points to greater success, and which requires more careful surroundings than in tuberculosis. The absolute necessity for special means being provided for its treatment through the new discoveries which have been made, both in private and hospital life, are most apparent. The attention of the whole civilized world is so strongly directed to this matter that its careful consideration in public and private life would be considered not only an act of duty, but its neglect a crime. Hospitals are being established, and sanatoria located in different parts of the country. We learn from a recent issue of the London *Daily Mail* of one million dollars being placed at the disposal of King Edward VII., by Sir Ernest Cassel, for a tuberculosis sanitarium, which is speedily to be erected, and will accommodate one hundred patients. Three prizes of $2,500, $1,000 and $500, respectively, have been offered in connection with this scheme for the best essays on and plans for the construction, and the advisory committee will be guided by the result of this competition in the execution of His Majesty's wishes. The competition is open to medical men of all nationalities. A large sum, the precise amount we do not recall, has quite recently been donated to the establishment of a sanatorium on the most approved scale, at Colorado Springs, which will soon be in operation. The absolute necessity for a tuberculosis hospital in this city, where the ranks of the poor are ravaged by the disease, and where they can be separated from other hospital cases, and the most approved form of treatment developed by recent investigation in their behalf, is daily becoming more apparent. The immense clientèle of consumptives presents an opportunity for investigation second to no other city in the world, and should be utilized not only for relief but instruction for the benefit of the world. This subject was so clearly presented in a recent editorial in the New York *Commercial Advertiser* that we copy it entire:

"Ever since our Department of Health, following in the path of medical science, declared pulmonary tuberculosis infectious there has been obvious need of a hospital in which victims of this disease could be properly treated and kept apart from other patients and from persons in good health. At present no public provision is made for them, and those who reach the city hospitals are necessarily distributed among them under conditions which are not often helpful to the sufferers, none of these institutions having the necessary facilities for dealing in the most favorable surroundings with infectious cases. Indeed, the only place now open to indigent victims of any contagious disease is the hospital on North Brother Island, which is intended only for virulent types, such as smallpox. As has been frequently pointed out by physicians, consumption of the lungs, as it is now understood, requires not only exclusive segregation, but treatment under specially prepared conditions, which are at present accessible only to persons of considerable means.

Fortunately the city has at its disposal several buildings which are well adapted to this purpose. These are the structures on Blackwell's Island, which were recently vacated by the insane, and which offer exceptional advantages for the establishment of a tuberculosis hospital. These buildings have many natural advantages, especially a large stone structure facing the south, and they could be made ready for the occupation of patients in a short time and at trifling expense to the city. One of them, which is at the entrance to the grounds, would accommodate one hundred persons and, as has been suggested by physicians, could be utilized for the reception of patients and for such cases as are curable. The large stone building already referred to, in which two hundred and fifty patients could be taken care of, is admirably adapted for the treatment of more advanced cases not deemed hopeless, especially if it were equipped with a large wind-protected piazza erected against the south wall for open-air treatment, while the five wooden pavilions capable of holding seventy-five patients each, would be well suited to the needs of hopeless cases.

The suggestion is made thoroughly practical by the fact that the Metropolitan Hospital, a well organized institution of twenty years' standing, is now on Blackwell's Island adjoining these buildings, which, when they were vacated, were turned over to its care. The

management of this hospital, which has been repeatedly commended by successive commissioners of charities for its careful, economical and scientific care of the patients and institution committed to it, is ready to undertake this work, thereby saving the city the expense of many appliances. This arrangement would also overcome the difficulty of securing the services of a resident physician for the tuberculosis hospital by a system of rotation among the physicians in the other divisions of the hospital, a condition which would not be possible in a separate institution. These suggestions, we understand, have been submitted to the charities commissioner, Mr. Homer Folks, by whom they will no doubt be carefully considered. That he is alive to the pressing need of a public tuberculosis hospital can safely be taken for granted."

THE CONSUMPTIVE IN THE HOME.

HAVING recently discussed the various opinions as to the communicability of tuberculosis, we will now take up one particular phase of this subject. It is obvious that whatever be the truth regarding the safety or danger of the consumptive in the home, the same must hold good, with certain modifications, of the consumptive in the hospital ward, in the hotel, in the sanitarium and in the sleeping car. When we consider that the western railroads are contemplating the introduction of special cars for consumptives; that Colorado, at least, is seriously considering the advisability of adopting quarantine regulations against this unfortunate class, and that there is a decided awakening of popular opinion, or rather that the laity are demanding an unequivocal expression of medical opinion as to the necessity of an attempt at quarantine against tuberculosis, the importance of professional agitation is apparent. It must be clearly understood that the question to be decided is not what one of us would do as a relative in the lamentable event of the occurrence of consumption in one's own family; not how much daring of a risk we would manifest as a matter of sentiment, of bravado or of laziness, but whether the reasonably careful and conscientious consumptive is an appreciable source of infection or whether tubercle bacilli are so ubiquitous that it is impossible materially to diminish the risk of encountering them.

Let us take up the latter problem first. That tuberculosis may be transmitted by dissemination of dried sputum in the streets and public places, is beyond doubt. That it may be due to infection from the lower animals, especially milch cattle, has not been questioned except by Koch, and the weight of evidence seems to be against his assertion. The control of bovine tuberculosis is, however, feasible, according to all statistics obtainable, while the examination of milk from tubercular animals has shown that incipient disease of the cow does not often mean infection of the milk. Moreover, there is a good chance that bacilli will die in butter or cheese; that milk will be sterilized by cooking, and that bacilli will pass the alimentary canal without lodgment. As to outdoor infection under ordinary circumstances, the mere dilution by atmospheric air is sufficient to render the danger relatively slight, while, if streets are properly cleaned and subject to the average amount of sunshine and washing by rain, an accumulation of bacilli is rendered highly improbable. Whatever danger attaches to cars, shops, depots, theaters, churches, etc., manifestly is increased for dwellings and other places where persons sleep, eat, and spend considerable portions of their lives, except for the possibility of controlling the discharge of bacilli by the voluntary coöperation of the consumptive. Personally, we confess to being what some physicians have designated a *phthisiophobe*, believing that it is practically impossible for the most careful consumptive with bacilli in his air passages to prevent the contamination of his environment. Granted that the patient does not wilfully expectorate on the floor and into registers, he must occasionally sneeze, and this has been demonstrated to be an effective means of scattering bacilli. He must sometimes cough without the protection of a handkerchief; when asleep, there must be some escape of sputum from the mouth and nose to soil the bedding. Towels, napkins, handkerchiefs and pockets must be infected, as well as table utensils. It seems scarcely possible that separate disinfection by boiling can be relied upon at the hands of servants so that, while the daily escape of bacilli may seem inconsiderable, in the course of weeks and months, it is inevitable that more or less infection of the house should occur. The relative deficiency of diluting air, the proneness of carpets and hangings to catch dust, the comparative dryness and even temperature, the frequent stirring up of dust by sweeping, all favor infection, whereas the distribution of an equal number of bacilli out doors might really be a negligible factor. Then, there must not be forgotten the final stage of fatal cases when the weakness or mental hebetude renders voluntary coöperation on the part of the consumptive out of the question.

It may be urged, and it must be admitted, that these considerations are largely theoretic and *a priori*, but there have been numerous demonstrations of tubercle bacilli from accidental contamination, without the deposite of large amounts of sputum. The insidious onset, the slow and irregular incubation of tuberculosis renders difficult the absolute tracing of a source of infection. When apparently so traced, it is always easy for the skeptic to argue for predisposition and atmospheric infection. Such an argument would not hold in the case of a child seized with measles, within the course of a couple of weeks after association with a playmate known to have measles; why should it be considered far-fetched to claim that consumption developing two or three months after close association with another consumptive, is due to such association and not to entirely accidental and unavoidable infection?

There is only one other infectious disease in close analogy with tuberculosis—leprosy. This disease, though even less contagious, in the ordinary sense, than tuberculosis, was exterminated from England in the

Middle Ages when sanitary science was scarcely known and when disinfection was not understood as a principle and was impossible save by fire, the sole weapon against this terrible disease being the isolation of lepers. Is there a single argument that applied to the need of extermination of leprosy that does not apply *a fortiori* to tuberculosis? In the light of the magnificent success of the old-time sanitarians, and of the freedom of subsequent generations from leprosy, who can say that the discomfort and sorrow of the isolated and of their bereaved families was not justified? Considering the vastly greater prevalence of tuberculosis, and our improved means of fighting fomites of infection, is not the duty of the modern legislator toward tuberculosis plain?

WOOD ALCOHOL AS A CAUSE OF BLINDNESS.

WITHIN the past two or three years there has been added to our list of virulent poisons an article of daily commerce previously unsuspected, but of the most fatal and insidious character. This is what is known as methyl or wood alcohol. It is on sale in every drug store, is consumed largely in the handicrafts as a solvent for varnishes and shellacs, for burning in lamps, for external applications, in the manipulation of extracts and essences, in fact, for all the purposes for which methyl alcohol is employed. Formerly, repulsive both in taste and smell, it is now purified and deodorized to such a degree as to be readily mistaken for grain alcohol, while its cost is less than half that of the latter. Hence, too, wood alcohol is not infrequently swallowed as a beverage, and its use in this way seems to be increasing.

The quantity of this agent required for the production of toxic effects has varied in different cases from half an ounce to one pint. Sometimes the trouble has been attributed to mere inhalation of the vapor, while working inside wine-casks, with shellac dissolved in wood alcohol, or from cleaning old furniture with a cloth saturated with the fluid.

Says Dr. Burnett (*Therap. Gaz.*): "The clinical histories of all cases of wood alcohol poisoning reported up to the present time have a distinct likeness, and are not similar to those accompanying any other form of toxic amblyopia yet studied. In fact, from the clinical history and the appearance of the fundus we can predict with almost certainty in any particular case that the poison was wood alcohol, so consistent are its manifestations."

According to Dr. Guss (*Med. World*): "The symptoms most usually observed in cases which did not prove fatal were those of acute gastro-enteritis, gastric pains, vomiting, headache, vertigo, delirium and more or less unconsciousness or semi-consciousness for a variable period; at the same time the pupils were widely dilated and there was a loss of vision in both eyes, generally complete within twenty-four or forty-eight hours. After a few days there was usually a gradual return of visual power to a limited extent; then there followed a gradual failure, generally resulting in permanent blindness. No other gross permanent lesion appears to have been noted. In the fatal cases the symptoms of acute poisoning were more pronounced. Blindness was recognized as a feature in one-half of the fatal cases cited, and in three of the other four it may have been masked by unconsciousness."

The ophthalmoscopic appearance, as described by Schweinitz, is that of optic neuritis, with exudations into the retina, and subsequent atrophy. The calibre of the retinal vessels is much diminished, and the veins are tortuous, containing very dark blood. In the early stages an absolute central scotoma and color-blindness are found. The lesion may be primary retrobulbar neuritis, or it may depend upon nutritive changes in the ganglion cells of the retina.

Treatment of any kind seems to have been of little or no avail, either in arresting the progress of the disease or averting its effects.

The important conclusion, then, is that the country is flooded with a subtle poison even more dangerous to vision than to life itself, since, whenever a toxic amount of wood alcohol has been taken (and this amount, as already stated, may be very small), we must expect a blindness more or less complete. The only means of meeting such a calamity is to prevent, as far as possible, the ingestion of the poison, by labelling it with the "skull and bones," and by informing the people, through every possible channel, of the highly dangerous nature of the drug.

TEMPERANCE IN THE TWENTIETH CENTURY.

THE cause of temperance—or, more correctly, of total abstinence from intoxicants—is certainly advancing at the present day, though not with "giant strides," or through the methods of moral and religious dehortation in vogue for this purpose fifty years ago. These are now replaced by more permanently effectual and less sensational appeals to scientific judgment and above all to the business experience of great corporations, such as the common carriers and insurance companies. As the *New York Times* puts it, in a recent editorial: "Few can be convinced that really moderate drinking is 'wicked,' but when its large cost is demonstrated to individuals the progress of reform will be infinitely hastened. Incalculable benefits have followed the slow spread of the conviction; first, that excessive drinking was incompatible with commercial or professional success, and later, that there were practical advantages in the abandonment of even moderate drinking." Nothing could be more influential in strengthening and extending this conviction than the exclusion of drinking men from the service of railroads and large manufacturing companies, and discrimination by insurance companies against the drinker. This latter measure, we perceive, has just been adopted by certain English companies, on the ground that abstainers are shown by statistics to have an advantage of at least 20 per cent. in the expectancy of life; and American companies will not be long in following the example. Total abstinence on the part of *all* its employees has, it is well

known, been the inflexible rule for several years, on every railroad line in the United States. These facts are alone sufficient to refute the position lately taken by one of our contemporaries—in an article entitled "Alcohol and Longevity"—on the basis of certain data respecting the average age of different classes of drinkers, alleged to have been reported, "once upon a time," by a committee of the British Medical Association. His conclusion is "that in the study of this question the elements of prejudice and intolerance have been greatly in evidence and that the subject has never been treated in a comprehensive way and from a purely scientific standpoint." Perhaps so, but, on the other hand, it is "the practicality of great corporations" which must settle it in the end, for business communities.

MASTOID SURGERY.

THERE have appeared recently in British medical journals several excellent articles, written by experienced practitioners, setting forth the need of encouraging people to work out their health problems by natural processes, rather than to run impatiently to surgical means.

In the same line of thought, Dr. Edwin W. Pyle read before the Otological Section of the Academy of Medicine, in October, an essay on "A Conservative Element in Acute Mastoid Surgery," which embodies many practical truths, worthy of general consideration. Dr. Pyle believes that specialism cultivates a morbid readiness to detect disease and to operate; that a good degree of health is compatible with innumerable departures from the normal standard; that the ear in acute affections shares the same law of self-limitation as others parts of the body.

The natural tendency of acute otitis media is to recovery, and not to complication to the degree set forth by statistics compiled from the records of crowded cities. In proof of this his positive statistics are given from the practice of twenty-five leading physicians, variously located in country towns, aggregating many years of experience, with only eighty cases of acute mastoiditis coming to operation. While these figures seem incredible to those accustomed to the frequency of the complication in hospital practice, they are nevertheless verified by the experiences of physicians distinguished for diagnostic, medical, and surgical ability. The explanation must be sought partially in the peculiar reciprocal relation between demand and supply; that the operation of natural laws varies in different orders of beings through the influence of habit, heredity, and environment. The conclusions formulated from clinical experience in this city are based upon a class of patients vitiated by dyscrasia and should not be compared with those where physical conditions, food, and climate are more conducive to recovery. It is better to trust to the protection and reparative processes of Nature than to the hand of the inexperienced operator. Dr. Pyle's article on "A Correlation of One Hundred Successive Mastoid Operations" shows that he is also familiar with the surgical aspect of the subject discussed.

SYMPOSIUM ON TUBERCULOSIS.

A SYMPOSIUM on tuberculosis was recently held at the Academy of Medicine, at which the subject of the "Need of Sanatoria for the Tuberculous" was discussed.

Dr. S. A. Knopf stated that contrary to the opinion of the United States Government, tuberculosis was not contagious. The sputum was not dangerous if destroyed. A man with well defined tuberculosis could do his work daily if the proper precautions were taken and the sputum destroyed. The government, he said, had stamped all of those afflicted with the disease with a stigma that was not proper.

He referred to the exclusion of immigrants because of alleged tuberculosis symptoms and tendencies. This, he insisted, was wrong. They were, in the major portion of cases, well provided not only to care for themselves, but their families as well. Many men had lost their positions in mercantile and professional houses because of a cough, or by admitting that the doctor had told them that they had the disease in its first stage, and the employers, under the impression that their presence endangered the lives and health of those about them, discharged them at once.

Dr. Knopf spoke of the recent action of the city officials of Liberty, N. Y., who class tuberculosis as a dangerous disease, and put it on the plane with contagious diseases. He also said that if the officials of that place referred to the boarding houses where tuberculosis patients were taken without proper medical inspection and attention, then it was dangerous, but to place the properly conducted sanatoriums in that class was an injustice.

Dr. Knopf recommended that a commission be appointed by the government, and of which the President should be an honorary member, to inquire into the disease, and find, if possible, not only a specific, but the best and most approved ways of treatment.

Dr. H. P. Loomis said the crying need of this city was a hospital for consumptives. No matter to what hospitals tuberculosis patients went, on the day following they were sent to Bellevue. There they were placed in a ward, fed on stimulants for a few days, and then removed to the Metropolitan Hospital, on the "Island." There they remained for a few weeks, when, from good treatment, they were able to walk about. Then they were discharged and sent back to the city, there to remain until they had a relapse. The second time they went direct to Bellevue, knowing well that they would save time by so doing, and that no other institution would take them. Dr. Loomis stated that he knew one consumptive who had made ten of these rounds, and died in the last one. This was the fate of the major portion. The present administration, said Dr. Loomis, could do nothing better or more humane than to provide for the poor consumptive. In December, 1901, in Belle-

vue, 427 medical cases were received, of which 138 were tuberculosis. He said a hospital for consumptives would not only be a good thing for the unfortunates, but that, through the experience gained in it, much would be learned toward finding the much wanted specific. It remained for the medical profession to bring about that sentiment.

Dr. Knopf offered a resolution denouncing the recommendations of the Surgeon General of the Marine Hospital Service for placing tuberculosis with the contagious diseases, and declaring it was not in accordance with the principles of American justice and liberty.

CHANGE IN HOSPITAL GOVERNMENT.

A CHANGE has been made in the government of the hospitals in the Department of Charities, a board of trustees having been appointed by the Mayor, upon the recommendation of the three leading charity societies. This board consists of seven, with a term of seven years, without salary, and removable only on charges. The organization of the department rests with the sinking fund commissioners, and there will be no change in the officers of the various institutions.

The plan virtually restores the old régime of "Governors," in vogue many years ago, and which became so obnoxious that it was abolished, three commissioners being substituted until the new charter reduced it to one.

It is a grave experiment in the light of the past, although we wish it well.

In our experience the single commissioner has given the better government. The larger commission of seven is unwieldy, perhaps irresponsible, and there is seven times the danger of favoritism.

We have heard no complaint against the late commissioner, personally; the fault was with the system of political appointments under him. In the new administration the political element has been eliminated, and under such a man as Mr. Homer Folks, we believe the department would be better managed than with the body which the amended charter provides. However, we shall see, and if our prognosis is correct, it will not be a difficult matter to change back.

A NEW DEPARTURE.

THE *American Homœopathist* has changed its name to the *American Physician*, and it is a most sensible thing to do. Now Brother Kraft let us state our facts, and let our readers interpret them to suit themselves.

The use of the terms homœopathic and allopathic are obsolete, and it would be better if they were never used.

Hahnemann says in his "Lesser Writings," page 363, that "The rallying motto of a sectarian name is incapable of exciting to sober, calm, scientific investigation; it only rouses the explosive spirit of accusations of heresy to a fierce volcanic flame. Truth and weal of humanity should be the only motto of the genuine elucidators of the art, and the watchword of the brotherly, peaceful bond of reunion, without slavish adherence to any sectarian leader, if we would not see the little good that we know, completely sacrificed to party spirit and discord." Thus saith the patron saint of the homœopathic school, and as to how faithfully his professional followers have accepted this dictum it is not necessary for us to answer.

We could say much more along this line, but we desist for the sake of harmony. We again assert as we have so often done, that the sectarian title is the only barrier to complete unification of the profession.

Thus the *American Homœopathist* becomes the "nondescript" *American Physician*, and the act brings us one point nearer the goal which is sure to be reached. The homœopathic school has nothing left but its name, all else having been absorbed by the broad minded physician of to-day, who will not tolerate sectarian designation, any more than Hahnemann would. Why not at once take the advice of the sage of Köthen so that we may start the century with a single school in medicine?

LATEST VIEWS ON STRYCHNINE.

JACOBI believes that the modern maxim, "simplicity of prescription, only one drug at a time, no polypharmacy, rely on Nature," has its unscientific and ridiculous side (*International Clinics*, January, 1902), and urges the necessity of combining medicines in combined conditions, as muscle, serous membrane, vagus and sympathetic may be affected coincidentally, or some of them at the same time.

Strychnine is eminently a vasomotor remedy (*International Clinics*, January, 1902), which is indicated to correct digestive distribution of the blood. It stimulates the center of the pneumo-gastric nerve and thereby contracts all the blood vessels under its control, mainly those of the heart and of the abdominal cavity. These latter depend on the action of splanchnic nerve, section or paralysis of which results in dilatation of the numberless and dilatable vessels of all the viscera. The vast amount of blood thus stored in the abdominal cavity is withdrawn from the aorta, the pressure of which is lowered (even much more than in excessive aortic insufficiency) and from the brain. Pallor, collapse and syncope are the result. Strychnine, through its stimulating influence on the center of the vagus, contracts the paralytic blood vessels, and thus facilitates a new supply to the heart and brain.

The dose of a remedy required is by no means a stable one, for the amount of blood appears to influence the action of a drug in the living organism. Young infants, ill fed, emaciated, slowly convalescent, or septic patients, or those in whom the nerves—for instance, in infectious fevers—have undergone organic deterioration, require larger doses apparanetly of strychnine (also of other poisons, such as quinine, atropine and nicotine) than the normal organism. The new born infant is but

little sensitive to strychnine. The spastic effect is obtained by 0.415 of a milligramme of the nitrate. In older children unexpected effects of strychnine have been observed; serious accidents have been recorded following its subcutaneous use in diphtheritic paralysis.

THE PATHOLOGICAL INSTITUTE.

THE Pathological Institute of the State Hospitals has been reorganized and Dr. Adolf Meyer, of Clark University, appointed Director.

Dr. Meyer was born in 1866 at Zurich, Switzerland. A graduate of the Zurich Gymnasium, he studied medicine at the University of Zurich from 1885 to 1890, under the guidance of Professors Klebs, Forel and others. During a year of post-graduate studies in Paris, Edinburgh and London he devoted his attention to neurology, and on his return to Zurich he worked in the laboratory and clinic of Professor Forel, and, in 1892, he published a study on the "Forebrain of Reptiles." After a sojourn in Vienna, Berlin, and another month with Professor Dejerine, in Paris, he went to Chicago, and from 1893 to 1895 he was pathologist at the Illinois Eastern Hospital for the Insane, and docent in neurology at the University of Chicago until he was called to Worcester, Mass., as director of the clinical work and laboratory of the Worcester Insane Hospital, and docent in psychiatry at Clark University. In 1896 he made an extensive study of insanity in Europe, especially under Professor Kraepolin, at Heidelberg, and since then he has carried out the plan of combining scientific laboratory research with the practical clinical work of a large hospital for the insane at Worcester.

In June, 1901, at the 450th anniversary of the University of Glasgow, the degree of LL.D. was conferred on him as delegate of Clark University.

The scientific and clinical work of the reorganized institute will be begun as soon as possible in a building connected with the Manhattan State Hospital for the Insane on Ward's Island. The scheme of investigation and research will be developed along lines to be formulated by Dr. Meyer, in association with the advisory board of the Pathological Institute appointed not long ago by the Commission in Lunacy.

WHO SHOULD PAY THE BILL?

THE question of remuneration of the physicians who attended the late President McKinley has been fairly stated by Dr. Matthew D. Mann, one of the number, who says:

"We feel that we operated on the President of the United States; that we operated for the American people with a view to saving their President for them; that we were called, not by the family of President McKinley, but by the authorities, the Cabinet and others, to take charge of the President; and we feel, therefore, that we have a right to look to Congress and the nation for our remuneration. We took a tremendous responsibility, because we took into our hands the life of the most prominent man in the world, and we feel that in taking such a responsibility we ran an immense risk. Had the autopsy shown that we made any serious mistake we would have received unlimited condemnation—we might even have been ruined professionally.

"From all these facts, we feel that we should not be called upon to render bills to the family. Any bill which we might render to the late President's estate would be larger than Mrs. McKinley ought to be called upon to pay.

"If we should render such a bill as she could properly pay we would feel that we would be very imperfectly remunerated. We feel, therefore, that Congress should take up the matter and make an appropriation such as it may see fit, and save us from becoming the objects of criticism by sending in a bill. For, no matter what bill we might send in, we would receive a certain amount of abuse. We feel also that the dignity of the medical profession demands that Congress should pay this bill, and that the services should be handsomely rewarded.

"The medical profession all over the world is waiting with great interest to see how this affair will turn out, and we do not propose to do anything, if we can avoid it, which will lay us open to criticism."

THE ADVANTAGES OF SMALL REPEATED DOSES OF SOLUTIONS OF MERCURIAL SALTS IN TREATING SYPHILIS.

BROCQ, of the Broca-Pascal Hospital, Paris, believes the day of gastric administration of mercury in syphilis is rapidly passing (International Clinics, January, 1902). The gastric method has serious disadvantages, especially if the drug is given in pill form, for the dissolution and absorption of the drug is by no means certain, while, when it does dissolve, it throws an irritating substance directly on the mucous membrane of the digestive tract.

It occurred to Brocq that mercurial compounds in solution were the proper form of administering this drug, taking up the old therapeutic method of Van Swieten's solution or the biniodide of mercury in syrup, given in small, repeated doses, so that the total daily amount of the remedy should be divided in four or six doses, scattered through the day. It removes the source of irritation, especially if given in milk or some natural alkaline waters. It was found that patients who complained that they could not tolerate mercurial preparations stood them nicely in these small, divided doses. Its inconvenience consists in the practical point that it is a great trouble to patients in active life, but they must be made to carry small bottles with them or tabloids, to be dissolved in milk or water. Brocq has used this method for twelve years, with the results that there have been very few syphilitic manifestations that resist its action.

Van Swieten's solution contains one gram of bichloride of mercury to the litre, equivalent to one centigram for ten grams, and Brocq gives one and a half to two centigrams of the salt daily. As the head of a

great venereal hospital, in that great venereal center, his opportunities entitle his opinion and results to great respect. He reports two thousand cases treated with success by this compound.

A NEW METHOD OF INJECTING COCAINE INTO THE SUBARACHNOID SPACE.

GUINARD has modified the technic of the spinal injection of cocaine (International Clinics, January, 1902), by drawing into a little sterilized receptacle two cubic centimetres of spinal liquid, then with a standard dropper, gauged to one millimetre, he lets fall into this solution four drops of a cocaine solution, of which two drops contain one centigramme. This he injects into the arachnoid space. In this way an organic liquid is injected uniting conditions of temperature and isotonia that are useful, if not indispensable. This operator reports twenty cases in which he used the procedure, with the result that headache, rise of temperature and vomiting were far less noticeable.

THE question of healthfulness of the route of the proposed Isthmian Canal is being discussed by sanitarians, and the consensus of opinion is in favor of Panama, on the ground chiefly of the difference in time of transit. It is fair to presume that sanitary measures may be found which will reduce the danger to the minimum.

If the result of American sanitation in Cuba is any criterion, we may be hopeful in respect to any contingency, as a worse condition is hardly to be expected than was encountered at Havana.

IT is said that the Northwestern University is to discontinue its medical school for women, from lack of support. A trustee is quoted as having said:

"It is impossible to make a doctor of a woman. Women cannot grasp the chemical and pharmaceutical laboratory work, the intricacies of surgery, or the minute work of dissecting. At our women's medical department we do not get as high a class of scholarship as is set by the other colleges in Northwestern University."

THIS is the day of freak faddists in all sorts of cure-alls, and the latest is one for the cigarette and liquor habit, and who claims also that the children are going to destruction in consequence of their faulty feeding. If one would take account of all the propositions of these freak reformers in diet, and attempt to live in accordance with their rules and regulations, in some cases they would be reduced to a diet of atmospheric air in restricted proportions. The truth lies between the two extremes in respect to dietetics, and if one will do the best for his patient, he will individualize each case for diet as he would for medicine. There is no broad road for either.

BROMINE AS AN ASEPTIC.

THIS remedy, of which Dr. M. O. Terry, ex-surgeon-general of this State, presented an essay to the International Congress at Paris, in 1900, has recently created considerable attention in the Paris hospitals, where it is considered as one of the best aseptics of the many which have been introduced into the profession within the past few years. At the time we published in the TIMES a brief résumé of the paper, and now make a short abstract from correspondent "Holland" for the *Philadelphia Press*, in which he speaks of its use in Paris:

"In view of several cases that have recently been reported of blood poisoning, the result of inoculations accidentally received by surgeons, and especially in view of the case of a Catholic clergyman of this city who died by reason of blood poisoning following an injury to his thumb, Dr. Terry's experience with bromine would seem to be of especial importance. He has given the formula to the world, with explicit details as to the treatment.

"Dr. Terry says that he has been poisoned over and over again during operations or dissections, and has never failed to receive immediate relief and cure through the use of this very simple and cheap remedy. It is a non-metallic element, obtained from sea water and some saline springs, and in other ways. He regards it as far superior for many purposes to any other antiseptic substance. He tells of the surgeon who became inoculated with diphtheritic poison in his thumb, a very serious matter. This surgeon's thumb was painted with bromine, relief was experienced immediately, and within three days all treatment was stopped.

"Another case in his experience was of a boy whose wrist had been torn by the teeth of a savage dog. It was cauterized with bromine, and the recovery was immediate. The doctor has treated several cases where injury has been occasioned to boys by toy pistols, accidents which are frequently followed by lockjaw. By a treatment of bromine in these cases a cure was effected.

"Dr. Terry, in his Paris paper, stated that when he noticed the deaths which occasionally occur at the large medical colleges as a result of dissecting wounds, he fe[el] assured that if bromine were kept on hand, ready for use, the early application of it would in every instance save life. Some of the physicians in this city are beginning to make use of this very simple, very cheap and easily obtained remedy, and Dr. Terry feels assured that if there were more general knowledge of its remarkable aseptic and curative properties it would pass into universal use. He recommends it especially for the treatment of gangrene."

The Maltine Company offers generous prizes for the best essays on preventive medicine, on the condition that its products shall not be alluded to in any way in the competition. The judges selected are three well-known practitioners, of standing and ability. The subject is worthy the attention which is being thus paid to it.

BIBLIOGRAPHICAL.

PROGRESSIVE MEDICINE, VOL. IV., 1901. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 400 pages, 13 illustrations. Per annum, in four cloth-bound volumes, $10.00. Lea Brothers & Co., Philadelphia and New York.

As usual with the volumes of this publication, the contents for December are of such a varied and practical character as to appeal to all classes of medical men.

Under Diseases of the Digestive Tract and Allied Organs Dr. Einhorn covers with great thoroughness the medical and surgical treatment of pathological conditions of the esophagus, stomach, liver, pancreas and peritoneum. Among the important subjects considered are pancreatic disease, the importance of which has lately been brought so prominently before the professional mind; diseases of the liver, the surgical treatment of which has proved so efficacious; and the ever-recurring topic of appendicitis. In Dr. Belfield's section on Genito-Urinary Diseases the subject of general infection by the gonococcus is fully discussed, and tuberculosis of the genito-urinary tract receives the attention which its importance demands. Dr. Bloodgood's article opens with an especially full and important discussion of all the methods of producing anesthesia, both general and local; their relative value as regards efficiency and safety. In connection with this he gives a description of the technique of lumbar puncture, its diagnostic and therapeutic importance and its use in spinal anesthetization. Wound treatment, infection, diabetic gangrene, are all considered at some length, and there is an especially valuable discussion on the importance of the examination of the blood in surgical cases. The various pathological conditions of the kidneys are ably treated by Dr. John Rose Bradford. Particularly instructive is his discussion of the various forms of albuminuria and the varieties of uremia. Dr. Brubaker's section on Physiology presents the recent advances in the physiology of the glandular system with special reference to the therapeutic value of gland extracts in their therapeutic application. He also presents the most recent conclusions on the study of artificial fertilization. The section on Hygiene, by Dr. Baker, is notable because of the universal interest excited by the discussion aroused by Dr. Koch's statement that bovine tuberculosis is not dangerous to man, and the recent researches as regards the transmission of yellow fever. The Practical Therapeutic Referendum, by Dr. E. Quin Thornton, although placed last in the book, possesses the greatest general interest and value to all practising physicians. All the recent therapeutic methods and remedies are presented, and their merits and demerits impartially discussed. It constitutes a therapeutic manual of the most advanced methods of treatment.

In this brief synopsis of the contents only the most prominent features are touched upon. In each section every recent advance of value in relation to the diseases described is fully written of, and from the most practical standpoint. The contributors are all authorities of the highest standing. The book is not a mere compilation of recent literature, but a series of critical reviews and original papers by masters of the subjects whereof they treat.

THE BABY; HIS CARE AND TRAINING. By Marianna Wheeler, Superintendent of The Babies' Hospital, New York, since 1891; graduate of the Training Schools of the New York Hospital and Sloane Maternity Hospital. Illustrated. Harper & Brothers, Publishers, New York and London. MCMI.

The instruction given in this little volume would go far to make that perfect household in life, and its development, which gives us a harmonious community, free in a great measure, from poverty and crime.

We cordially wish the book an entrance into every family.

CLINICAL HEMATOLOGY. A Practical Guide to the Examination of the Blood with Reference to Diagnosis. By John C. DaCosta, Jr., M.D., Assistant Demonstrator of Clinical Medicine, Jefferson Medical College; Hematologist to the German Hospital, etc. Containing 8 full-page colored plates, 3 charts, and 48 other illustrations. Octavo, 450 pages. Published by P. Blakiston's Son & Co., Philadelphia, 1901. Price, $5.00 net.

The author of this exceedingly interesting book has done his work in a practical, systematic, conscientious and intelligent manner, so that it cannot fail to be of service to the practitioner.

The book is designed as a practical guide to the examination of the blood by methods adapted to routine clinical work, and is an endeavor to recount the salient facts of hematology as they are understood at the present time, to correlate certain of these facts with familiar pictures of disease, and to apply them to medical and surgical diagnosis. The purpose has been to interpret the blood report according to its true value as a clinical sign, neither exploiting it as a panacea for every diagnostic ill, nor belittling it because of its failure consistently to give the sought for clue in every instance.

The methods of examination likely to prove useful in every-day practice have been described in detail, in the hope of thus simplifying the minutiæ of blood-counting, staining, and other means of investigation. In the discussion of the primary anemias and of the anemias peculiar to infancy, prominent clinical features other than those referable to the blood, have been briefly mentioned, in order to add clearness to the differential diagnosis. For convenience in reference, the various diseases included in the section on general hematology are arranged alphabetically, rather than grouped according to a traditional classification.

The greater part of the original data referred to in the text is taken from the records of the Pathological Institute of the German Hospital, Philadelphia, where a systematic account of all blood examinations has been kept for the past six years. The remaining data represent the author's personal examinations in hospital and private practice and in the army medical service, these sources of statistics together including about four thousand blood reports in various pathological conditions. Hematological literature has been freely consulted in the preparation of this volume, and due credit in the text has been given to the authors of whose labors use has been made.

An additional noteworthy feature of Dr. DaCosta's book is its illustrations. Recognizing the importance of correct illustrative work in a book on Hematology, he has striven to make the colored plates represent as exactly as possible the subjects as they appear to the eye, and has attained more than the usual amount of

success. With the charts and numerous black-and-white reproductions the same care in preparation has been exercised.

The publishers have done their part in the best art.

VENEREAL DISEASES. A Manual for Students and Practitioners. By James R. Hayden, M.D., Chief of Clinic and Instructor in Venereal and Genito-Urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York; Assistant Visiting Genito-Urinary Surgeon to Bellevue Hospital. Third and Revised Edition. Illustrated with sixty-six engravings. Lea Brothers & Co., Philadelphia and New York, 1901, pp. 301.

The flattering reception accorded to this little volume has enabled the author to prepare a third edition of his valuable work, in which he has added new sections on Vegetations and Herpes Progenitalis, many new illustrations, and to completely revise the text, so that the subjects are brought thoroughly up to date, greatly enhancing its usefulness. The general practitioner, as well as the student, will find the book of great service.

PROBLEMS RELATING TO SURGICAL OPERATIONS; being the Alvarenga Prize Essay for 1901. By George W. Crile, A.M., M.D., Ph.D., Professor of Clinical Surgery, Medical Department, Western Reserve University, etc., etc. J. B. Lippincott Company, 1901.

Few works reach our table which bear evidences of such sincere work, and very few are more valuable for those surgeons who seek an excellence in their profession above the mere mechanics of surgery.

Students under such a master as its author are fortunate indeed, and deserve little sympathy if they do not carry to their work valuable ideas for the benefit of those who come under their care. It would require too much space to quote properly from its pages. Intravenous infusion of saline solutions, with illustrative cases, the reasons for the inaction of certain drugs, page 87, studies of cocaine and eucain, and the numerous experiments on dogs, which are clearly and concisely stated, even without the other very valuable matter, compel us to say that no progressive physician or surgeon can afford to neglect its careful perusal. The clear type, good paper, and binding leave little to be desired.

ANATOMY IN ITS RELATION TO ART. By George McClellan, M.D. Illustrated by three hundred and thirty-eight original drawings and photographs, made by the author, and expressly prepared for this work. Philadelphia and London, W. B. Saunders & Company, 1901.

Among artists there is an axiom that in order to draw or paint the human figure intelligently one should know what lies under the skin. This applies especially to the bones and muscles, with which the artist has most to do, and he learns to produce the real as well as the ideal, seen by his own well-trained eye, without a morbid desire to be so realistic as to make beautiful, living flesh look like the cold stillness of marble or death.

Anatomy in its relations to art should, and doubtless will, be in the library of every leading art school in the land. A teacher of anatomy might gladly take his pupils to a dissecting-room for thorough study, but a scrupulous board of control might not think it advisable for a mixed class, so he has to content himself with the skeleton, anatomical figure, and model provided, and decorate the skeleton with muscles of clay, as best he may, for the pose he wishes to represent.

This clear, concise book, with technical terms translated, will be very helpful to both art and medical students. Free-hand drawing lessons should be included in every medical college course, as the correct eye for proportion, precision, and steady hand are proverbial of the artist.

Many of the illustrations are photographs of some of the most celebrated statuary in Rome and at the Louvre, with models in approximately the same pose. The drawings, made by the author, prove his keen artistic sense, with whatever anatomical skill he may have inherited or acquired. Versatility of talent, with good judgment to balance it, is a very desirable quality to have. "The pen is mightier than the sword," but the pencil and brush outweigh both.

SAUNDERS' MEDICAL HAND-ATLASES.

ATLAS AND EPITOME OF BACTERIOLOGY. A text-book of Special Bacteriological Diagnosis. By Professor Dr. K. B. Lehmann, Director of the Hygienic Institute in Würzburg; and R. O. Neumann, Dr. Phil. and Med., Assistant in the Hygienic Institute in Würzburg. From the Second Enlarged and Revised German Edition. Edited by George H. Weaver, M.D., Assistant Professor of Pathology, Rush Medical College, Chicago. In two volumes. Part I., consisting of 632 colored figures on 69 lithographic plates; Part II., consisting of 511 pages of text, illustrated. Philadelphia and London, W. B. Saunders & Co., 1901. Cloth, $5, net.

This work supplies a long-needed want in the field of bacteriology and bacteriologic diagnosis, and proves a most valuable addition to Saunders' Series of Hand-Atlases. As in all the volumes of this commendable series, the lithographic plates are accurate representations of the conditions as actually seen, and this well-selected collection, if anything is handsomer and more useful than any of its predecessors. As an aid in original investigation the value of the work is inestimable.

The text is divided into a general and a special part. The former furnishes a survey of the properties of bacteria, together with the causes of disease, disposition, and immunity, reference being constantly made to an appendix of bacteriologic technic. The special part gives, so far as possible in a natural botanical arrangement, a complete description of the important varieties, the less important ones being mentioned when worthy of notice. The causes of diphtheria and tuberculosis, together with the related varieties, have been given especial attention.

Most praiseworthy is the reformative tendency in regard to the grouping of varieties of bacteria, the strict division of the system especially, the rational naming of the bacteria, etc. The system of nomenclature is entirely original with the authors, and is deserving of the greatest commendation, particularly that of the fission-fungi, which has been handled in a most masterly manner.

As a text-book of bacteriology and bacteriologic diagnosis it is all that could be desired, embracing, as it does, in a comparatively limited space, all the important species and many of the less valuable ones, and discussing them in language concise and easily intelligible.

OUTLINES OF PHYSIOLOGY. By Edward Groves Jones, M.D., Lecturer on Physical Diagnosis in the Atlanta College of Physicians and Surgeons, and Professor of Physiology in the Dental Department

of the same. With 107 illustrations. 12mo, 400 pages. Published by P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia. Price, $1.50, net.

This little volume contains the essential facts of up-to-date physiology, as related to the practise of medicine, in as concise a form as possible, giving preference to those subjects which seem to the author of most practical importance.

It is an excellent book for the purpose intended.

A Manual of Venereal and Sexual Diseases. By Wm. A. Hackett, M.B., Ph.G., M.C.P.S. (Ont.), Professor of Dermatology and Venereal Diseases, Michigan College of Medicine and Surgery, Detroit; and N. E. Aronstom, M.D., Ph.G., Assistant in Chemistry and Clinical Dermatology, Michigan College of Medicine and Surgery, etc. Chicago, G. P. Engelhard & Co., 1902. 12mo, pp. 208.

The authors have attempted in this little volume to give the practical side of these important subjects, in as brief and concise a manner as possible, including a discussion of all modern appliances. A chapter is devoted to functional disturbances of the male generative organs, together with the most important sexual psychopathies.

The student and the general practitioner will find the book satisfactory.

Jonathan Hutchinson, F.R.S., general secretary of the New Sydenham Society, has requested Messrs. P. Blakiston's Son & Co., of Philadelphia, the American agents of the Society, to announce the publication of "An Atlas of Clinical Medicine, Surgery and Pathology," selected and arranged with the design to afford, in as complete a manner as possible, aids to diagnosis in all departments of practice. It is proposed to complete the work in five years, in fasciculi form, eight to ten plates issued every three months in connection with the regular publications of the Society. The New Sydenham Society was established in 1858, with the object of publishing essays, monographs, and translations of works which could not be otherwise issued. The list of publications numbers upward of 170 volumes of the greatest scientific value. An effort is now being made to increase the membership, in order to extend its work.

American Edition of Nothnagel's Encyclopedia: Variola, Vaccination, Varicella, Cholera, Erysipelas, Whooping-Cough, Hay Fever. Variola (including Vaccination), by Dr. H. Immermann, of Basle; Varicella, by Dr. Th. von Jurgensen, of Tübingen; Cholera Asiatica and Cholera Nostras, by Dr. C. Liebermeister, of Tübingen; Erysipelas and Erysipeloid, by Dr. H. Lenhartz, of Hamburg; Whooping-Cough and Hay Fever, by Dr. G. Sticker, of Giessen. Edited, with additions, by Sir J. W. Moore, B.A., M.D., F.R.C.P.I., Professor of the Practice of Medicine, Royal College of Surgeons, Ireland. Handsome octavo volume of 682 pages, illustrated. Philadelphia and London, W. B. Saunders & Co., 1902. Cloth, $5, net; half morocco, $6, net.

The articles included in this volume treat of a number of diseases second to none in importance, whether regarded from the standpoint of preventive medicine or as the cause of widespread sickness and death. Although the excellence of the German work, and the detailed and comprehensive manner in which the respective authors had dealt with their several subjects, left comparatively little to be added, the editor has not hesitated to amend the text whenever necessary, and has also embodied the results of his personal experiences, gained during a varied practice extending over thirty-three years.

One of the most timely articles included in the work is that on Variola, including Vaccination and Variolation. Dr. Immermann's monographs on these subjects, now of vital interest, especially in the United States and Great Britain, have probably never been equaled for circumstance of detail and masterly argument.

The other articles, each by a German specialist of recognized authority, are also skilful expositions of the particular diseases under discussion. The entire volume being edited by a specialist of acknowledged ability, the work, it will be seen, has been brought thoroughly down to date. It is, indeed, a superb contribution to the literature of medicine.

Practice of Medicine. Containing the Homeopathic Treatment of Diseases by Pierre Jousset, M.D., Physician to Saint Jacques' Hospital, Paris; Professor of Clinical Medicine; President of the Homeopathic Society of Paris, etc. Translated from the third, enlarged, French edition, with valuable additions and annotations by John Arschagouni, M.D. New York: A. L. Chatterton & Co., 1901.

Professor Jousset is by no means a new figure in medical literature. For over fifty years the author has been recognized in the scientific world as an ardent student, a close observer, an invaluable critic and a scientific and practical writer of rare excellence. Jousset's "Practice of Medicine" is a clinical work, clearly and liberally written, fully up to date, and the result of over fifty years of experience of one of the most practical and logical minds in our profession. The ripe scholarship of Dr. Arschagouni has given to the English text a finish and to his additional notes a value which will be warmly appreciated by its American readers.

A Text-Book on Diseases of the Ear, Nose and Throat. By Charles H. Burnett, M.D.; E. Fletcher Ingals, M.D., and James E. Newcomb, M.D. With numerous illustrations. J. B. Lippincott & Co., 1901.

Part I., Diseases of the Ear, is written by Charles H. Burnett, M.D.; Part II., Diseases of the Nose and Nasopharynx, by E. Fletcher Ingals, A.M., M.D., assisted by Otto F. Freer, A.M., M.D.; Diseases of the Pharynx and Larynx, by James E. Newcomb, A.B., M.D.

The authors, each a specialist in his own department, have presented the anatomy and physiology of the ear, nose and throat in accord with the latest discoveries in their respective departments. In the general and special treatment they have presented those methods of medication and surgery which are at once the newest and accepted as the best by leading specialists. The united coöperation of the authors of the three departments has led to a treatise particularly adapted to the precise and thorough presentation of the subjects within its scope.

Feminology; A Guide for Womankind, giving in detail instructions as to Motherhood, Maidenhood, and the Nursery. By Florence Dressler, M.E., M.D., Professor of Gynæcology in the College of Medicine and Surgery, Chicago, etc. Illustrated.

Chicago, C. L. Dressler & Co., 1902. Pp. 702, octavo. Price, $3.

This book is intended for the laity, and it can be safely commended as such by the profession. The subjects are treated intelligently from a high moral and practical standpoint. It is a volume which may be read with perfect propriety by any adult person, man or woman.

The author of the *Medical News Formulary*, published by Lea Brothers and Company, Dr. E. Quin Thornton, has taken advantage of his revision for 1902 to introduce such of the newer remedies as have been found by practical experience to be valuable, and to add certain formulæ containing older drugs, but in new combinations, which have been found to have marked therapeutical efficacy in particular conditions.

Volumes III. and IV. of Blakiston's Son & Company's "System of Physiologic Therapeutics," being a practical exposition of the methods other than drug, giving useful information in the prevention of disease and in the treatment of the sick, edited by Solomon Solis Cohen, A.M., M.D., gives us, in its third and fourth volumes, Climatology, Health Resorts, and Mineral Springs, by F. Parkes Weber, A.M., M.D., F.R.C.P., London, with the collaboration for America of Guy Hinsdale, A.M., M.D. There is no work before the public which contains such full and reliable information upon the subjects treated as these two volumes.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

Dr. William L. Stowell, Chairman.

Dr. Henry L. Coit stated that one of the difficulties in arranging for infant-feeding with the proper proportion of ingredients in the prepared food is the difficulty of easily obtaining cream of a definite percentage of fat. He presented an automatic siphon which he said would overcome this difficulty.

Dr. Henry D. Chapin thought the best way to obtain a fairly constant cream was to allow milk to stand for about six hours in a cool place. The creamy layer, known as the gravity cream in the trade, contains nine-tenths of the butter fat in the milk. If the first nine ounces of this are used, it may be considered to contain cream in the proportion of three to one to the amount of milk; if the first fifteen ounces are used, the proportion is about two to one. To obtain this upper layer he advised the use of the dipper.

Dr. Milton A. Gershel read a paper on the Value of the Widal Reaction in Children, as illustrated by cases seen in Dr. Koplik's service at Mt. Sinai Hospital. The method of applying this test was to determine whether agglutination of the bacilli took place when the blood was diluted to the extent of one to twenty. If there were still doubts, then the test was repeated with a dilution of one to fifty. Dried blood was used in all cases, except where the clinical course of the disease aroused serious suspicions of typhoid fever, and yet the Widal test continued to be negative. In only 36 of over 100 cases was the Widal test positive at the first examination; 13 per cent. gave the reaction before the seventh day, 46 per cent. before the fifteenth day, and 85 per cent. before the twenty-fifth day. In more than one-half the cases this test left the diagnosis in doubt until well into the third week of the disease. Dr. Lovett Morse, of Boston, found that the Widal reaction did not occur before the end of the second week in most cases. Professor Musser, of Philadelphia, found that the reaction did not occur as a rule before the seventh day. Because this Widal reaction is delayed is no reason why we should think the disease is not typhoid fever if other symptoms raise the suspicions of the disease. In one case referred to thirteen blood examinations were made before any positive reaction could be obtained, and yet all the time the patient was running a typical typhoid course. Experience at Mt. Sinai Hospital proved that typhoid fever often exists in children in cases where it was usually unsuspected and where the symptoms pointed to the existence of some other disease.

Dr. David Bovaird read a paper on "Primary Intestinal Tuberculosis in Human Beings and its Relation to Bovine Tuberculosis." He said he had been collecting data on the subject for a number of years and he believed that such cases were extremely rare. Bacteriologists are not agreed whether human and bovine tubercle bacilli are varieties of the same micro-organism or are individual bacteria with certain extrinsic similarities. Tuberculosis in cattle is not at all rare, yet it is not as frequent as has been sometimes asserted. Prof. Osler, in Baltimore, points out that about 3 per cent. of more than 5,000 cattle that are slaughtered yearly are tuberculous. In Boston less than 1 per cent. is found to be tuberculous. The German government called attention to the fact that bovine tuberculosis was not liable to cause human tuberculosis by eating the flesh of tuberculous cattle, unless nodules of tuberculous infiltration occurred in the muscles. This is, however, extremely rare. The milk of tuberculous animals is dangerous only when the udder of the animal is affected and tubercle bacilli thus gain an entrance in numbers in the milk. Adami, however, has found tubercle bacilli in milk when there was no demonstrable tuberculous affection of the udder to be found after very careful examination. Prof. Nocard, of Paris, has pointed out that even when the milk of animals injected into the peritoneum of guinea-pigs proved to contain virulent tubercle bacilli and set up tuberculous processes, the fluid still might be perfectly harmless when ingested by the mouth. English cattle seem to suffer more from tuberculosis than those of our country. Kanthack found that more than one-half of the cattle near Cambridge in England were affected by tuberculosis. There is but scanty evidence that milk will produce tuberculosis in children. Dr. Bovaird, after a very careful search of the literature, was able to find only 16 cases in which tubercle infection was traced to the milk. Prof. Woodhead, of England, considers primary tuberculosis of the intestines to be rather frequent although Continental authorities are opposed to this opinion. Tuberculosis of the intestines is less frequently observed here than abroad and it is evident that the tuberculosis is rarely due to the tubercle bacilli in milk. However, it would seem that a possibility of infection in this way could not be denied.

RETROSPECTIVE DIETETICS.

Dietetic Treatment of Epilepsy.— Schlöss, writing in a recent number of the *Wiener klinische Woch.* (*Boston Med. and Surg. Journal*) gives the result of certain experiments in the diet of epileptic patients, which are of more than passing interest.

In order to ascertain the effects of a strict meat diet and of a milk diet, Schlöss divided sixteen patients into four groups. Two groups he fed on an exclusively meat diet for six weeks, and on a milk and vegetable diet for the succeeding six weeks. The third and fourth groups had the milk diet first and the meat diet later.

He found that neither diet had any effect upon the number of attacks, or upon the general condition of the patients. The withdrawal of salt had a definite effect upon them, but also led to a loss of weight and strength difficult to counteract. In two of the cases experimented upon the attacks entirely ceased, and in three others they became very infrequent. An investigation as to the effect of fat and acid foods was negative. The moderate use of alcohol was also found harmless.

Rudolph Balint, in the *Berl. klin. Woch.*, Jan. 10, 1901, gives an account of his experiments with the diet, which is based upon the theory that as the amount of chlorides is lessened in the system the effect of bromides is increased. The diet which the writer employed in the treatment of twenty cases consisted of milk, 1,000 grammes; meat, 300 grammes; potatoes, 300 grammes; bread, 200 grammes; sugar, 50 grammes; butter, 40 grammes; coffee, 10 grammes; two eggs. The food was cooked without the addition of salt, and one to two drams of bromide of potassium was given each day. Under this treatment there was a marked diminution of the convulsions in all of the cases, and in many they disappeared entirely. It was found that the amount of chloride of sodium in the diet as first employed was considerable, and consequently the reduction of chlorine in the organism was not very rapid. The diet was then changed to 1 to 1½ liters of milk, 40 to 50 grammes of butter, three eggs, 300 to 400 grammes of bread and fruit. Such a diet approximately equals 2,300 to 2,400 calories. It was found difficult for patients to take meat that had been cooked without salt, and bread prepared without salting was also unpalatable. The latter was obviated by salting the bread with bromide of potassium, which acted in every way as an excellent substitute for the chloride of sodium. The results in twenty-eight cases that remained for some little time under treatment were: In nine recent cases the attacks disappeared in seven; and in nineteen chronic cases, in fifteen; in the remaining six cases the attacks continued, but their intensity was lessened.

The Indigestion of Loneliness.—In an article entitled as above, a writer in the *Lancet* says: "There are some few happily disposed individuals who can dine alone and not eat too fast, nor too much, nor too little. With the majority it is different. . . For due and easy nutrition food should be slowly taken and the mind should not be intensely exercised during the process. Every one knows that violent bodily exercise is bad just after a meal, and mental exertion is equally so. In fact the experience of countless generations . . . has perpetuated the lesson that a man should not eat alone, nor think much at this time, but should talk and be talked to while he feeds. Most people do not think much while they talk, and talking is a natural accompaniment of eating and drinking." Women, we are told, fare even worse than men, when obliged to make a solitary meal. "She gets dyspepsia because her digestion has not sufficient practice; a man gets it because his functions practice it too often in the wrong way. Worst of all, perhaps, is the case of the solitary cook. . . These women whose main occupation is to prepare food for others, find it impossible to enjoy, or even to take, food themselves. They suffer from dyspepsia, which is cured if somebody else manages their kitchen for a week, allowing them to take meals without preparing them. It needs no moralist to declare the evils of solitariness. . . Certainly it is not good to eat and to drink alone."

Sugar-free Milk as a Food for Diabetics.—Robert Hutchison, in the *Lancet* of June 22, 1901, says a difficulty in practice is in providing a patient suffering from diabetes with a diet free from carbohydrates and which can be taken for a long time. The nutritive constituents must consist largely of proteid and fat, but when carbohydrates are taken out of the diet it is difficult to replace them by sufficient fat. Fat in the form of bacon is palatable, and more or less fat can be added to meat and fish. Butter is difficult to administer, except when taken, as is commonly the case, with carbohydrates. This difficulty in the ingestion of fats is met by separating the sugar from milk, thus furnishing a food rich in proteid and fat, but without a carbohydrate. Mr. Morris, chief dispenser to the London hospitals, has prepared a very perfect milk from which sugar has been removed, which resembles a rich specimen of ordinary milk. It can be administered plain, or with some effervescing water, or added to tea, coffee, or cocoa. With eggs it can be made into a custard, thus adding a palatable and agreeable food to the limited range permitted the diabetic. Sugar-free milk contains approximately 3 per cent. of proteid and 5 per cent. of fat. If three pints are taken in a day, the food value amounts to 990 calories, or nearly one-third of the total amount required, while the amount of fat which the patient obtains is equivalent to full three ounces of butter. In cases in which a small amount of carbohydrate is desirable, it is sometimes best to substitute sugar-free milk, and give carbohydrates in the form of potatoes or bread, as this enables the patient to ingest a larger amount of fat.

Treatment of Acute Dysentery.—The best treatment, according to the experience in the Philippines, seems, in acute cases (*Med. News*), to be the limitation of diet and the thorough cleansing of the bowel by large saline enemas. At the beginning of dysentery, in sthenic cases, starvation for several days with a liberal allowance of water to replace that lost by the diarrhea, seems to be indicated. The experience in children's summer diarrheas in recent years adds weight to these procedures as the most important therapeutic measures. Stimulants should be used, but only for absolute indications. Contrary to the usual practice, the diet, when food is allowed in small quantities, should not consist of concentrated nitrogenous material, meat-juice and the like, but rather of diluted carbohydrates. The various cereal foods in thin broths are best. Somehow these do not seem to furnish the material for microbic growth that nitrogenous food does, and moreover the acid fermentation to which these substances are especially liable makes the material present in the intestines an eminently unsuitable medium for the growth of bacterial parasites. With reference to amebic dysentery less is known, although here, too, limitation of the diet to the absolute needs of the individual and thorough cleansing of the bowels seem the most successful remedial measures.

Endurance of Vegetarians.—Baelz, of Tokio, is reported in the *Deutsche med. Woch.* as having stated, at the meeting of the Berlin Medical Society, March 20th, that he has found the vegetarian Japanese actually more enduring than meat-eating foreigners in control tests, and the events in China have corroborated his experiences. In the interior of Japan it is impossible for the masses to procure even fish or much rice, and as the Japanese cows do not give milk, they have no butter or cheese, and the food is limited to barley or buckwheat with one-quarter rice, the soya bean, and no meat. The soya bean contains as much albumin as beef and 20 per cent. oil, but the amount of cellulose renders it difficult to digest. Children who eat much rice have grooves

in their bones from the bands of their clothing, although rachitis is unknown in Japan. Among the tests of endurance he mentioned that he once drove 110 km. in fourteen hours, changing horses six times. A Japanese with a cart made the trip at the same time in fourteen and one-half hours. He had two Rickisha men trot 40 km. with his weight of 80 kg. every day in the heat of the sun. At the end of fourteen days one of the men had gained 0.5 kg. in weight. He then added a little meat to their food, but the men said it made them feel tired, so it was suspended after three days. At the end of the twenty-second day of the test the men were as full of energy as at first.

RETROSPECTIVE THERAPEUTICS.

Chloral Hydrate in Puerperal Eclampsia.—Hallowes (*Lancet, Am. Med.*) reports four cases of puerperal eclampsia successfully treated by rectal injections of chloral hydrate. All four cases were primiparas, two commenced antepartum and two postpartum; one antepartum and one postpartum were illegitimate. In all four cases the convulsions were severe and of fairly frequent occurrence. Bloodletting (20 ounces) was tried in one case (postpartum) after consultation, but without effect. On the continuance of the convulsions, 60 grains of chloral hydrate in 1 ounce of water were injected per rectum. This was repeated three times during the next twelve hours, on the slightest reappearance of twitching, recovery being afterwards uneventful. In the other postpartum case the same treatment was adopted. The attacks were severe, but readily yielded to the influence of the chloral. It was, however, necessary to administer in all four injections, at intervals as occasion required, for twenty hours following delivery. The antepartum cases were treated in a similar manner, and in one of these chloroform was administered pending the dilating of the os.

Treatment of Sciatica by Cocainization of the Spinal Cord.—Manega (*La Semaine Médicale*, 21 An., No. 9) has published a case of hemiplegia associated with agonizing pain of the paralyzed leg, which was cured, and permanently, by one subarachnoid injection of cocaine. Encouraged by this success, Pulle treated in a similar way a case of sciatic neuralgia which had failed to yield to the ordinary medicaments—0.75 cubic centimeter of a 2-per-cent. cocaine solution was injected. Pain disappeared at once and finally.

Picric Acid in Smallpox.—J. F. Romero (*Cronca Medica Mexicana*, Aug. 1st; *Clin. Journal*, Sept. 18th) says that in 162 cases of smallpox, 46 recovered without noticeable scars, and 101 without a singe trace of pitting. All had been treated with picric acid applied as a lotion or in a salve, and pitting occurred in only 15 cases. The picric acid probably acts, he says, by destroying the pyogenic germs that have found their way into the pustules. In many instances he noted the coincidence that other members of the family failed to contract the smallpox from patients duly treated with picric acid. His formula for the lotion is 2 grammes of picric acid in 15 grammes of alcohol and 185 grammes of water.

Diagnostic Significance of the Reaction for Sulphocyanates in the Saliva in Diseases of the Ear.—E. Urgens (*Voennomedicinski Journal*, February, 1901; *Am. Med.*) found that potassium or sodium sulphocyanate, normally present in saliva, is as a rule absent in suppurative chronic affections of the ear. If the reaction, therefore, is absent or weak, middle-ear disease should be strongly suspected. Likewise, the progress of a case may be determined by the presence and degree of the reaction. The method of testing for the sulphocyanates is as follows: The saliva is collected in test-tubes or on small cotton swabs applied to the ends of the salivary ducts. To this saliva is added a saturated solution of hydriodic acid and starch-paste (in proportion of 1:5). In the presence of sulphocyanates a blue color develops.

Pure Carbolic Acid for Carbuncle.—Manley adds his favorable indorsement to those who advocate and practice in cases of carbuncle the deep hypodermic injection of pure carbolic acid. In the earliest stages an injection of one to three drops is sufficient, but in the active suppurative stage repeated injections of a large quantity, 15 to 20 drops at a time, are required. This method is not painful, and no toxic symptoms follow. Free stimulation, tonics, and a nutritious diet play an important part.

Devitalized Air Toxemia a Prime Cause of Tuberculosis.—By Dr. Charles Denison, Denver, Colorado (British Congress on Tuberculosis). Under this head it is intended to discuss *the degenerative effects of deficient ventilation*, and to show how, through the devitalization of the air, by its loss of vitality, due probably to a change in its normal electrical state, a dyscrasia (in persons breathing it) is created, which gradually drifts into degeneration of tissue, the so-called "soil" of tuberculosis. The Richardson experiment is discussed, and the need is emphasized of further experimentation on this line in order to throw more light upon this important matter. The prevailing idea among medical men, that the tuberculosis germ is the only case, to the exclusion of as important predisposing causes, is criticised. The question of "soil" is now even more important than that of "seed," in order to successfully combat this dyscrasic disease. Man, under our present civilization, is very generally tainted with a dyscrasia which goes back to this devitalized air toxemia for its cause. The fault is the disproportion of breathing space and sun influence to the needs of man in sleeping, living, and working rooms. The *deficient ventilation curve*, upon which most civilized peoples are living, will, by illustration, be contrasted with *the normal life curve*, which should represent the longer and uncontaminated lives of a people living under natural conditions. *Outdoor life* is thus suggested as the *key-note* to this congress. The need of education along these lines will be emphasized, and plans for legislative control, through yet to be enacted laws, will be suggested.

The Therapeutic Effects of Blue Electric Light.—According to Dr. A. V. Minine, the chief advantage of blue electric light lies in its action on the vasomotor nerves. The action of blue electric light is diametrically opposite to that of white light from ordinary incandescent bulbs. Blue light produces an anema of the parts exposed, while white light causes the tissues to be filled with blood. Blue light has a very marked anesthetic effect, and the author even employed it instead of cocaine in suturing wounds, incising abscesses, etc. Not only does blue light produce complete painlessness of the parts, but it also favors the healing of wounds by first intention. The removal of stitches can be accomplished without any pain under blue electric light. If a contusion is exposed to this light, the occurrence of ecchymosis, or of a hematoma, is prevented. Burns and scalds are very advantageously treated with blue light, for under its influence the lesions heal rapidly and painlessly with the formation of dry scabs, without the use of any local applications. In peliosis rheumatica white electric light produces certain changes in the eruption. The margins of the spots grow paler and the center,

which rises in the form of a minute cone, becomes yellow. This yellow color seems to depend upon the presence of pus; if so, this would be another fact in favor of the infectious theory of purpuric diseases. Blue light causes the spots to wrinkle and grow smaller; to turn red for a short time, and finally to pale and disappear. The general condition, the appetite, sleep, etc., are also markedly improved by this treatment in purpuric patients. The best combination for cases of purpura and peliosis is, first, a fifty-candle white lamp, to be followed in a few minutes by a twenty-five-candle blue one. This treatment does not prevent recurrences of the eruption, but it shortens all the stages of the disease.

The Therapy of Cancer.—P. Lassar (*Berl. klin. woch.*, March 11, 1901; *Brit. Med. Jour.*) reports two cases of epithelioma treated by "Asiatic pills." The first patient took 1,000 pills during the course of several months, and in all thus received about 1 gram of ac. arsen. She was sixty-two years of age. The growth was situated on the bridge of the nose, and was about the size of a lentil. A small piece was excised for microscopical examination, and showed the structure of epithelial cancer. The tumor gradually diminished in size, and eventually disappeared altogether, there being only an indistinct scar where the small portion had been excised. The second case was that of a man seventy-four years of age, who was treated by arsenious acid in 1892 for a small tumor situated on the left ala of the nose. Microscopically, the growth proved to be an epithelioma. The growth disappeared completely, and there has been no recurrence. A photograph of the same patient was taken this year; that is, nine years after. Lassar reports that of the three cases he reported in 1893, all have remained free from recurrence; one, however, a lady aged thirty-one, having died about two years ago of an independent condition.

Infection by the Urine in Convalescence from Typhoid.—In the *British Medical Journal*, November 24, 1900 (*Pediatrics*), Dr. Walker published an article on the danger of the urine of persons convalescent from typhoid fever. He cited a very interesting account of an outbreak in a locality where it had not occurred before, following the return of a soldier who had been stricken with typhoid in South Africa. In the issue of the same journal for July 13, 1901, Dr. T. Clifford Allbutt had narrated the history of an epidemic in an isolated community, which, at the time of its occurrence, he attributed to contamination of water supply by the feces of a patient who had recently had typhoid. However, in view of what has recently been written on this subject he thinks it far more likely that the urine is a more frequent source of danger. Considering the results of bacterial examinations made for him, he is satisfied that typhoid bacilli do not survive in the stools long into convalescence, even if until that period.

He accepts the statement of Horton-Smith and others that typhoid bacilli are excreted in large numbers in the urine until convalescence is far advanced.

From these considerations arises the necessity of rendering the urine sterile; otherwise each patient must be made to fully appreciate that he is a menace to the community so long as he continues to scatter his urine carelessly about without disinfecting it.

Why and When We Feel Hungry.—A German physician says we feel hungry when the blood-vessels of the stomach are comparatively empty. Many anemic patients have no appetite even when the stomach is empty; but the blood-vessels of the stomach are not empty in such cases, but rather congested. In healthy people lack of blood in the stomach acts upon a special nerve, and all the characteristic symptoms of hunger follow. Now this hunger nerve and the nerves of the mouth and tongue are branches of the same nerve-trunk. Hence, a stimulus applied to the tongue, by a spice for example, creates or increases appetite. On the other hand, when the nerves of the tongue are affected by a diseased condition of the mucous membrane of the mouth, the patient has no appetite, though his stomach may be empty, and he may be in actual need of food.

Obstetric Spinal Analgesia.—According to Guéniot (*Bull. De L'Acad. De Med.*) spinal cocainization has been employed in sixty obstetrical cases in France. A review of these shows that the small amount of cocain required—1 cg. of cocain in a 1 per cent. solution is ample—obviates the inconveniences sometimes observed in surgical operations. This amount induces complete analgesia below the umbilicus, suppresses the pain caused by the contractions of the uterus and the passage of the child, and far from interfering with delivery, seems on the contrary to accelerate it. It imparts greater energy and regularity to the contractions, and also enables the woman to make more energetic and more sustained efforts, as they are painless. The analgesia lasts from seventy minutes to two hours. No serious danger for mother or child has been observed in consequence, the only phenomena of intoxication noted being cramps or slight tremor in the limbs, transient headache, slight vomiting and a slight rise of temperature. At the same time it is best to avoid using this method of anesthesia in patients with lesions of the heart or large vessels, chronic affections of the respiratory apparatus, or disease of the nerve centers, especially brain tumors. It is also contraindicated when absolute asepsis cannot be secured. Further special contraindications are extremely rapid course of delivery, frequency and energy of contractions of the uterus or exaggerated tension of the organ, or the necessity of manual intrauterine intervention. The cocain evidently has a pronounced stimulating and regulating action on the contractility of the organ. If this fact is confirmed by further experience it will give the drug a high place in obstetrics. While it acts like ergot, it does not tetanize the uterus like the latter, and leaves the cervix permeable, at least to a certain extent. The indications for obstetric spinal cocainization are four: All obstetric operations which demand anesthesia, with the exception of those requiring the introduction of the hand into the cavity of the uterus; excessively painful delivery; extremely protracted course of the latter in consequence of weakness and irregularity of contractions, and lastly, a tendency to hemorrhage from any cause, inertia of the uterus, placenta previa, etc. The decrease in the amount of blood lost during delivery is extolled by Doléris as one of the chief advantages of obstetric laparotomies, and possibly also the preservation of the mental faculties. Doléris states that he is now aiming to make parturition altogether painless, but Guéniot doubts whether this will prove an advantage on the whole.

LECITHINE.

The first important studies connected with the rôle of Lecithine in nutrition are due to Danilewski. In 1897 the Société de Biologie de Paris received on this subject an extremely interesting communication from Charrin. Selensky (a pupil of Danilewski) has been able to show that its action on the red corpuscles is

remarkably beneficial. Numerous authorities have since studied the physiological effects of Lecithine, and all agree that it assists nutrition, favors assimilation of nitrogen and phosphorous compounds, so essential to the economy. The conclusions of Desgrez and Ali Zaky recently published by the Société de Biologie are on the same lines, so also are those of Gilbert and Fournier, who treated a number of phthisical and neurasthenic patients, with results showing improvement in appetite, weight, strength and general health.

There is some difficulty in preparing and preserving Lecithine in a pure and active state; this, however, has been overcome by Vial, of Paris, by diluting it with oil and administering it in capsules, representing one grain each. By these means the disagreeable taste of Lecithine is avoided and its active properties preserved.

One capsule three times a day with meals is the usual adult dose.

THE WAR ON THE MOSQUITO.

Until recent years, the mosquito and the fly were only the housekeeper's foes; they were classed with roaches and bedbugs, as undesirable insects, but still trifling in nature. Now that we know that these insects can transmit infection, they rise in importance in the world of endeavor. It will be interesting to see if the united efforts of scientists, hygienists, and the public will rid the world of these universal pests. Yellow fever, filariasis and malaria are known to be carried by these insects without peradventure.

At once the methods of destroying these insects become of value. In this connection the experiments just published by the U. S. Marine Hospital Service, of the work of Dr. Rosenau, is particularly timely. The experiments were directed toward the value of formaldehyd gas and sulphur dioxid as insecticidal agencies. His conclusions, after a series of most interesting experiments, are as follows:

"Formaldehyd gas is a feeble insecticide, for mosquitoes may live in a very weak atmosphere of it overnight. It will kill them, however, if it is brought in direct contact in the strength and time prescribed for bacterial disinfection. For this purpose any of the accepted methods for evolving the gas is applicable, the methods which liberate a large volume in a short time being more certain than the slower ones. Direct contact between the insects and the gas is more difficult to obtain in ordinary room disinfection against mosquitoes than against germs, because the sense of self-protection enables the former to endeavor to escape from the effects of the irritating gas. They hide in the folds of towels, bedding, clothing, hangings, fabrics, and out-of-the-way places where the formaldehyd gas can not penetrate in sufficient strength to kill them. The gas is polymerized and deposited as paraform in the meshes of fabrics, which prevents its penetration, and large quantities are lost by being absorbed by the organic matter of fabrics, especially woolens.

"Mosquitoes have a lively instinct in finding cracks or chinks where fresh air may be entering the room, or where the gas is so diluted that they escape destruction. They are able to escape through incredibly small openings. Some of the smaller varieties, such as the *stegomyia fasciata* can get through a wire screen having twelve meshes to the inch. Therefore, formaldehyd gas can not be trusted to kill all the mosquitoes in a room which can not be tightly sealed.

Rosnau concludes, that to succeed in killing all the mosquitoes in a closed space with formaldehyd gas, the following requirements are essential: A very large volume of the gas must be liberated quickly, so that it may diffuse to all portions of the space in sufficient concentration. The room must have all the cracks and chinks where the insects may breathe the fresh air carefully sealed by pasting strips of paper over them. The room must not contain heavy folds of drapery, clothing, bedding, or fabrics in heaps, or so disposed that the insects may hide away from the full effects of the gas.

This observer has found in his experiments that sulphur dioxid is unexcelled as an insecticide. Very dilute atmospheres of the gas will quickly kill mosquitoes. It is quite as efficacious for this purpose when dry as when moist, whereas the dry gas has practically no power against bacteria. Contrary to formaldehyd, it has surprising powers of penetrating clothing and fabrics, killing the mosquito even when hidden under four layers of toweling in one hour's time, with very dilute proportions.

According to this report, sulphur, which lost ground because it did not kill spores, is now regarded with the greatest favor in insect-borne disease.

SUBSTITUTION EXTRAORDINARY.

Substitution extraordinary is illustrated in a history supplied by the Farbenfabriken of Elberfeld Company, who have been able to ferret out a most despicable adulteration of chemicals practised by a band of drug counterfeiters. Not only were the products themselves imitated, but the boxes, labels, etc. Druggists buying aristol, phenacetin, sulfonal, trional, etc., should be on their guard against sophisticated articles. The protest of the manufacturers rightly contends that "both the physician's reputation and the welfare of his patient are at stake in this matter. When, therefore, we protect ourselves against these criminal practices, we believe that we are equally protecting the medical profession."—*Editorial, American Medicine, December 21, 1901.*

In the *Revue de Psychology* for July Dr. Sikorsky says that the ordinary explanation of the vivacity of infants, as due to the great irritability of their nervous systems, is inadequate. He says that while the subcortical centres are completely developed, the development of the cerebral cortex is only partly completed, so that every impulse, coming from the sense organs, meets great obstacles in the undeveloped cortex and is thus discharged, for the most part, in the sub-cortical centers; another way of saying that a child's activities are largely reflex.

In the same article he gives a novel explanation of the lack of expression in the eyes of idiots. He says when even close attention is given to an object the eyes are not quiet, but have instants of movement, connected by instants of almost complete rest. The eye thus ranges from one point of an object to another. In photography, the moments of rest are represented on the plate by luminous points. In photographs of idiots and general paralytics these points are not present, proving that the eyes are constantly in motion, without any intervals of rest. It is easy to see then that no point of an object is well defined on the retina and that consequently idiots and general paralytics are incapable of seeing any object clearly.

—The authorities in Paris, France, have authorized the construction of boxes which are being attached to lamp posts, and will contain a stitcher, dressings for wounds and a telephone connecting with the nearest ambulance station.

MISCELLANY.

—The widow of Theodore Stern, the banker, has given Frankfort-on-the-Main 5,000,000 marks to promote medical objects.

—Ice applied to the external genitals—the scrotum in men, the labia in women—is said to be the best and simplest method for controlling blood-spitting and nosebleed.

—An English millionaire, Mr. W. H. Sutton, left in his will seven and a half millions of dollars for building houses for the working classes. This is by far the largest gift devoted to such a purpose.

—The practice of chewing Burgundy pitch is almost universal in the Swedish Province of Dalecarlia, and to this fact a writer in *Med. Woch.* attributes the comparative freedom which the Dalecarlians enjoy from caries of the permanent teeth. The beneficent action of the gum he regards as due not merely to its mechanical effect, but also to the oils contained in it, which are of an antiseptic and bactericidal character.

—On the entire island of Cuba, at the end of the first week in August, there were said to be only five cases of yellow fever known to the authorites, an unprecedented condition of immunity. The death rate of Matanzas, where the conditions of health are not so favorable as in Havana, has been from 20 to 24 per 1,000 during the last few weeks. This is about the same as the death rate of Washington and Baltimore.

—A writer, signing himself E. G., in the *Boston Medical and Surgical Journal* for May 16th, is inclined to rate sunlight above sleep as promoting health in children. In the case of his own children he has found them thrive better if allowed to play outdoors all day instead of being called in for a nap, according to the almost universal practice. They did not really lose sleep, he intimates, for they consumed less time in getting asleep at night and woke later in the morning.

—Japanese dentists, according to a contemporary, perform all their operations in tooth-drawing with the thumb and forefinger of one hand. The skill necessary to do this is acquired only after long practice, but when once it is obtained the operator is able to extract half a dozen teeth in about thirty seconds without once removing his fingers from the patient's mouth. A dentist in this country is mentioned in the papers as using this method with success, having learned it from a Japanese.

—M. Tuffier has made many punctures in the lumbar region to establish the correctness of the diagnosis of fracture of the skull when its existence was doubtful. The cerebro-rachidian liquid is almost always discolored with blood in cases of fracture of the base of the skull, and the greater or less discoloration of the liquid is in proportion to the gravity of the lesion. These punctures may also have some value from a therapeutic point of view, as enabling a differential diagnosis in other diseases.

—It is announced that professors of Rush Medical College are planning a series of experiments to determine the effects of different foods upon the mental power of individuals. They will experiment for the most part upon students of the Chicago Hospital School, 5401 Drexel Avenue, which has been recently affiliated with Rush. The students of this school, which has a large number of defective children, will be divided into classes and restricted to a particular diet for a certain length of time until the effects can be noted.

—A Russian doctor has decided that, contrary to the general opinion, electric light plays less havoc with the eyes than other forms of illumination. He bases his deductions on the fact that disease and damage to the eye is proportioned to the frequency of closure of the lids. He has found that the lids close in a minute 6.8 times with candle light, 2.8 times with gas light, 2.2 with sunlight, and 1.8 times with electric light. While this fact may be true for the external portion of the eye, it is clinically proved that retinal and muscular asthenopia are greatly increased by electrical illumination and the reflex conjunctivitis and blepharitis are made worse.

—Last summer the Superior Council of the Paris School of Fine Arts had under consideration the question of employing the academic loin covering (*calecon*) for models posing in the presence of the women pupils who are now admitted to the school. The representative of these ladies has solved the difficulty by a letter addressed in their name to the Superior Council, in which she says: "We demand to be treated like the women-students of medicine. Do they put drawers on the subjects in the schools? We study what they do, but from another point of view. That is all." This argument has prevailed, as indeed it ought to, and the Superior Council has proscribed the *calecon*.

—According to the *Lancet's* Berlin correspondent, Dr. Garnault, the French medical man who offered himself to Professor Koch for experiments on the identity of human tuberculosis and perlsucht, has arrived at Berlin. He had a long interview with Professor Koch, the language used being English, as Professor Koch does not speak French, neither does Dr. Garnault speak German. Professor Koch declined to give injections to Dr. Garnault, and advised him, if he really wished to do something toward the elucidation of the question, to drink unsterilized milk from a tuberculous cow for about a year, and to abstain as much as possible from other foods. Dr. Garnault agreed to do so, but in addition will have an injection of highly virulent perlsucht bacilli performed every month.

—A writer in the *Churchman* relates the following instance of care for the aged among birds, which was told him by a merchant who visited the coasts of South America for guano. His party had landed upon a small island near Trinidad, in the Caribbean Sea. It was a mere rocky ledge, the haunt of thousands of waterfowl. About the middle of the island they noticed a solitary bird sitting upon a rock, which rose like a sort of low table above the general level. "The bird was old; the feathers had fallen from its head and neck, where the skin hung in wrinkles. It was unable to fly, and allowed itself to be smoothed and patted. While we stood there young birds flew in from the sea with fish in their beaks and fed the old one. This they did several times, not noticing our presence. A semi-circle of fish bones was heaped up about the old fellow, remains of many meals, and evidence that it had long been fed in the same spot. We wondered whether they had contrived to bring to it water; but as showers fell almost daily, this might not be necessary."

ORIGINAL ARTICLES.

THE THERAPY OF THE DUCTLESS GLANDS.

BY M. SHELLENBERG, M.D., PHILADELPHIA.

THE so-called ductless glands, whose secretions have been used as remedial agents, are the thyroid body, the suprarenal capsule, the thymus gland and the spleen.

The Secretion of the Thyroid Body.—Myxedema, as first described by Ord, exhibits increasing weakness associated with swelling of the body, enlargement and thickening of the skin, mucoid exudation into the subcellular tissue, and a very extraordinary slowing of all functions. The appetite becomes feeble, the movements are slowed, the temperature falls to a subnormal range, the patient's intellection is slow; as the disease advances the slowing of function becomes more marked until the subject falls into complete apathy, with very much lowered temperature and a failure of all activities. This condition attracted the attention of Kocher, of Bern, who founa that the excision of the thyroid body in cases of goitre was followed by the gradual appearance of typical myxedema; he subsequently determined, however, that the myxedematous symptoms did not occur if only a portion of the gland was removed, proving that the absence of the thyroid body produces general widespread disturbance of nutrition. Horsley, of London, stimulated by the observations of Kocher, removed the thyroid gland from monkeys, and found that the result was the production of symptoms like those of myxedema—apathy, lowering of temperature, exudation of mucin into the subcellular tissues, tetanoid symptoms, and finally death from progressive loss of all functional power. The experiments of Horsley suggested to Murray the use of the thyroid gland in the treatment of myxedema.

According to the definition of Wood, *thyroidin* is a proteid body, containing a notable percentage of iodine, which was discovered by Baumann in the thyroid gland. The assertion of Baumann that thyroidin is the active principle of the gland has been confirmed by Roos, Hennig, Treubel, Ewall, Levy and others, so that its remedial activity seems to be reasonably established.

By the work of other observers it would seem that thyroidin is the chief active principle of the thyroid body, and that there is also another substance in the gland which has physiological activity.

A myxedematous condition of the body is undoubtedly the result of the absence from the blood of some principle or principles coming from the thyroid gland, which may be supplied artificially to the blood. The myxedematous patient who has been relieved by such artificial supply naturally will relapse when the supply is cut off, so that treatment of a myxedema consists in giving large amounts of the gland to remove the results which have been produced by the lack of the thyroid principle, followed by the stage of convalescence in which small doses should be administered continually to prevent the return of the myxedemic symptoms. Thyroid extract has been tried in insanity, especially in melancholia, with stupor, climacteric insanity and incipient dementia. The clinical reports are as yet uncertain in their statements of results, but are sufficiently favorable to warrant further investigation.

Thyroidin has been tried in old syphilitic ulcerations, in psoriasis and in various skin disorders, especially psoriasis, but with small success. In simple goitre, before degeneration has occurred, thyroid treatment often brings about destruction and absorption of the overgrown gland. The extract has been used with asserted excellent results in bringing about the absorption of large contracting cicatricial masses which resembled true keloid. It is fairly successful in obesity attended with anemia.

The occurrence of symptoms of thyroidism should be the danger signal for the lessening or withdrawal of the dose. In exophthalmic goitre, of course, the extract is contra-indicated, as the probable explanation of this disease is an overabundance of the thyroid principles in the system. In those cases in which it has been tried it has very distinctly aggravated the conditions.

The thyroid itself it to be administered raw or very slightly boiled, to the amount of quarter to half of the sheep gland daily. The glycerin extract or the dried and powdered gland is, however, thoroughly efficient and is preferable. Start with a grain of the dried gland three times a day, increasing the dose until fifteen or twenty grains a day are given, or until there appears some nervousness, shortness of breath, rapid pulse or other pysiological symptoms.

The thymus gland has been tried in the treatment of exophthalmic goitre. The reports are not encouraging. In a recent elaborate paper upon the subject, Mackenzie comes to the conclusion that the thymus gland has no specific action on the three cardinal symptoms of Graves' disease.

Suprarenal Extract.—Addison's disease has never been satisfactorily explained clinically. It exhibits a progressive asthenia, a peculiar bronzing of the skin, anemia and loss of digesting power, with excessive vomiting, probably from some destructive disease of the suprarenal capsules. The suprarenal capsules contains a toxic principle. It has been established that the poison chiefly resides in the medulla; that its activity is not destroyed by boiling unless the boiling be too long continued, but it is killed by alkalies, although unaffected by weak acids or the gastric juice; that it dialyzes readily, and is soluble in cold water, glycerin and dilute alcohol; that drying at a moderate temperature does not affect its activity, though this is destroyed at a temperature of 110° C. Potassium permanganate destroys this principle, which is soluble without change in the arterial blood. There is considerable proof that this extract is valuable in the treatment of Addison's disease. If the disease is cancerous or tubercular, even supplying artificially to the system an active principle prepared by those bodies will not, of course, stop the local disease. The proper dose cannot be considered as settled, but it is not large. Oliver and Schafer found that 0.0037 gram of the dried extract, equal to about 0.015 gram of the fresh gland, would produce a maximum of the arterial pressure in a dog weighing ten kilograms. A glycerin extract (gr. xl of gland to f℥), in doses of ten to fifteen minims given hypodermically once a day is often of good effect. It is necessary to know that well-cleaned capsules are used in making the extract. When convalescence has been obtained in Addison's disease it is essential to continue the remedy in minute doses to keep the advantage obtained.

As yet there is no clinical evidence that the pituitary body is of value, for its functions are still almost unknown, but there seems to be some relation between it and the suprarenal capsule, in so far at least that its extract produced a rise of blood-pressure, largely the outcome of contraction of the arterioles.

In such diseases as myxedema, cretinism, etc., the spleen is frequently enlarged, which suggests that there is some relation between this organ and the thyroid body. Oliver and Schafer injected the extract intra-

venously in the dog, producing a fall, followed by a marked rise, in the arterial pressure. The splenic extract used by H. C. Wood in various cases of exophthalmic goitre has two practical difficulties attending its administration. If it be given by the mouth in sufficiently large doses to produce distinct effect it is very apt to cause nausea and sick stomach. If it be given hypodermically it frequently causes local abscesses. In dispensary cases its employment has sometimes been followed by distinct amelioration, but in a large majority of cases has not achieved good results. In such cases, however, it is always impossible to know whether a disagreeable, more or less repulsive medicine is taken regularly or not. In one hospital case the patient greatly improved, and went home claiming complete restoration to health. Wood reports that "in one very bad case in private practice, with extremely violent action of the heart, very pronounced exophthalmus and great enlargement of the thyroid body, a teaspoonful of the glycerin extract caused on three occasions violent gastric distress, with pains radiating through the upper abdomen, lasting some hours and followed by continuing loss of appetite. Ten minims were then given hypodermically twice a day, although they produced so much local irritation that their administration had to be stopped every little while for a day or two. They were used with these interruptions for six months. Then ten drops of the spleen extract were given three times a day for many months longer. The result has been complete disappearance of the thyroid, almost complete relief of the nervousness and breathlessness, though some degree of exophthalmus remains, and the heart, though comparatively very quiet, is still irritable. Before treatment the patient could scarcely walk a few steps in the street; now she can walk a long distance, provided the pace be not too brisk. In thirty-five years of practice Wood states that he has never seen in any case of exophthalmic goitre so near an approach to cure as that obtained in the two cases just narrated, and whatever good has hitherto been achieved has been the result almost solely of prolonged rest and of climatic treatment, especially of residence at the seashore." It seems to Wood, therefore, that there is at present sufficient evidence to call for a thorough trial of the splenic treatment.

Toxins and Antitoxins.—The antitoxins which are animal substances whose value as remedial agents is now acknowledged are the products of bacteriological growth in the animal organism. It is impossible in a paper of this sort to give fully the history of the development of these substances, of their physiological activity and of their value in the treatment of disease. We will mention the more important remedies, with an estimate of their value and method of administration.

Many pathogenic germs are now known to create in the animal organism two albuminous substances capable of violently affecting nutrition. To one of these has been given the name "toxin," to the other that of "antitoxin." The toxin is the substance produced by the bacteria beneficial to the bacteria themselves, whilst the antitoxin, similarly produced, is hostile to them. The body is a battlefield in infectious diseases between the toxins and the human organisms, helped by antitoxins. The toxin has a double action. The diphtheritic bacillus in the throat forms a poison which attacks the immediately surrounding tissue, and so weakens it that the bacterium is capable of overcoming the natural resistance of the part. Later, the toxin being absorbed into the blood, it affects the general system and produces the constitutional symptoms and the widespread lesions of diphtheria. How the antitoxin destroys the bacterium is largely a matter of theory. By some it is thought to act chemically upon the toxin, but the present evidence renders this improbable. The most plausible explanation according to Wood is that the antitoxin in some way so affects the protoplasm that the latter is able to resist the action of the toxin. If antitoxin be given to an animal suffering from infectious disease due to the local lodgement of a pathogenic germ, the first evidence of its beneficial action is the failure of the bacteria to grow, though they are not destroyed.

Ten years ago the world was aroused by the reported discovery by Koch of a way of curing phthisis. The subject had not then been worked out far enough for any one to comprehend clearly what this so-called tuberculin might do in tuberculosis, but to thoughtful minds it was apparent from the beginning that tuberculin could not cure tuberculosis if it acted as Koch reported. Professor Koch claimed that tuberculin acting in conjunction with the bacillus so increased its local action that the tissue surrounding the tubercle rapidly softened and was cast off with the tubercles. With our present knowledge of the whole subject, it is clear, as we stated in a previous paper, the tuberculin of Koch was simply an impure toxin. When the tubercle bacillus grows in the human lung the toxin which it forms slowly kills the tissues and produces ulceration; whilst doing this it also finds its way into the blood and causes the so-called hectic fever and the other constitutional symptoms of chronic tuberculosis. When Koch's tuberculin is injected into the blood in a certain small quantity, it produces no febrile reaction in the normal individual because there is not enough of it present in the system. The important point is, however, that the injection of such a toxin, even if it should kill every tubercle bacillus, will not cure the patient, for the tuberculin does not affect the essential weakness of the consumptive individual with the lack of resistance to the tubercle bacillus. It does not even stop the reinfection of the loosened tubercle; on the contrary, the setting free of the tubercle bacilli favors their entrance into the lymphatics and the blood vessels, and consequent dissemination throughout the body, so that in actual practice a general tuberculosis may often immediately follow upon the treatment of a local tuberculosis by injection of tuberculin.

The various antitoxins have been used in the majority of the germ diseases, but their usefulness as yet seems to be established principally in diphtheria and possibly in erysipelas.

We know now that tetanus has been cured in the laboratory with certainty with its appropriate antitoxin, but it is known definitely how much tetanus toxin has been given to the animal, and the antitoxin is administered just before or immediately with the toxin; whereas, in human tetanus, it is different. The patient is generally saturated with the toxin of the disease for hours or days before the antitoxin can be given. Very rarely in these human cases can the inoculation be followed with the toxin, but with the bacillus, which takes usually from three to eight days before it is sufficiently developed to produce enough toxin to cause an outbreak of symptoms, so that there may be complete general saturation of the system when the apparent disease first appears. The assertion of Cattani, that the tetanus antitoxin is of little or no use when the symptoms are sufficiently severe to end in death within three days is probably correct. In subacute and chronic tetanus antitoxin has from time to time seemed to save life.

So firmly is the diphtheria antitoxin established that one observer of it states that the value of antitoxin in diphtheria appears no more doubtful than that of quinine in malaria. The antitoxin should be used early, as it acts chiefly by arresting the growth of the bacillus. If given late in the disorder it may arrest the further growth of the germ, but the patient dies nevertheless, because the tissues are already fatally poisoned with the toxin, or, perchance, have already undergone an irreparable degeneration. Again, after the first day a general septic infection is apt to appear.

It is self-evident that the early use of the antitoxin in diphtheria is important. It is a proud triumph to be able to state that there are well-observed cases of diphtheria on record in which antitoxin, administered during the first few hours after the outbreak of the disease, has failed to cure. But on the contrary statistics show that if the injection be postponed to the fifth day, the mortality rate is not greatly reduced by the use of antitoxin. We must remember that our modern municipal scientific methods may become causes of death under these circumstances. "A case of suspected diphtheria presents itself to the practitioner; already the child has been sick, it may be, one or two days. A culture-tube is prepared, sent to the municipal laboratory, examined, and the result sent back to the practitioner, who then goes to see the patient. It is very fortunate if not more than one day is lost in this way, and the loss of those hours may well mean the loss of the life, for the time has elapsed during which the antitoxin used in moderate quantity does harm when the child has not diphtheria." *When any case presents the clinical aspect of diphtheria the antitoxin should be injected at once.* Of course it is sensible to say that the use of antitoxin in any case of diphtheria must not be allowed to interfere with the accustomed local and general treatment.

Cases in which a fatal result in diphtheria was fairly attributed to pure antitoxin are rare, although it may produce disagreeable symptoms. Among the most characteristic of these is a rash of variable character; sometimes it is scarlatinoid, sometimes rubeoloid, sometimes it is widespread erythema. The skin eruption may be accompanied by swelling of the joints and by fever, but seems always to subside without serious results. Recently there has been an outbreak of tetanus in St. Louis following the injection of diphtheria antitoxin. It is too early to state the cause; at the moment it may be said to be due to some lack of thorough precaution.

Probably every pathogenic germ has its antitoxin, so the time may come when every germ disease will be treated with its appropriate antitoxin. The only other antitoxin used to any considerable extent with success is that of erysipelas, the "streptococcus antitoxin." Clinical experience proves that the streptococcus antitoxins now in the market are active in all forms of streptococcus diseases; at least, there are as yet no means of distinguishing between the different forms of streptococci poisoning. In erysipelas and allied septicemia the remedy may be tried with fair hope of success. In puerperal septicemia Charpentier has reported 40 cases in which the remedy has been used, with a mortality of 35 $^{9}/_{10}$ per cent.; Tissier, 13 cases, with a mortality of about 46 per cent. The latest collection of cases is that of Shober, 23 English cases, with 4 deaths, a mortality of 19 per cent. In a recent discussion on this subject, based upon the report of a number of cases, the result arrived at was that when the injections of serum were begun early in pure streptococci cases they were of value, but that in cases of puerperal septicemia they were often of little effect, because the sepsis was not due to streptococci. In advanced diphtheria, in scarlet fever and in various cases with secondary streptococcus infections the antitoxin may be of service. There is no generally recognized unit of streptococcus antitoxin, and therefore cannot be any definite dosage. At present the practitioner should follow the directions given with the antitoxin serum by the firm manufacturing the preparation.

Reports on other antitoxins are appearing every few days, and undoubtedly in five years' time we will see great changes and advances in this division of medicine.

IMPORTANCE OF CARE IN TYPHOID FEVER WITH REFERENCE TO THE COLD BATH.

DR. W. Z. MAGAZINER, PHILADELPHIA.

IN speaking of the mode of infection in enteric fever I wish to call attention to two interesting cases which came under my notice last week. Infection was in both cases due undoubtedly to gross carelessness. The first is that of a child who was admitted for some other disease. He apparently improved for a time but suddenly developed a high temperature and showed a positive Widal reaction. The second case was that of an orderly in a hospital. Being but recently employed he neglected ordinary antiseptic precautions and developed an attack of typhoid fever. I call attention to these two instances merely to point out the fact that the utmost precautions must be observed in our handling of enteric fever cases and especially in the proper disinfection of all articles in any way connected with the patient and of all excreta.

Our first case is that of I. H. K., female, married, twenty-one years of age. She was admitted to the hospital on the 31st of October. Her family history is negative. Her personal history shows the ordinary diseases of childhood. She has been married for three years and has one child who is a year old. She was well until two weeks ago, when she developed a dull headache. This gradually increased in severity and was soon accompanied by vomiting. Slight bodily pains became manifest, she lost her appetite and showed a slight fever. There was no nausea and no nose bleed. Insomnia, however, was very persistent. On admission she presented a condition of comparatively good nourishment. Her facial expression was rather intelligent, her cheeks were flushed, and her lips dry. On examination the condition of the heart was seen to be good with a slight roughening of the first sound. The state of affairs in the chest was rather interesting. There were resonance on both sides and moist rales on inspiration. The spleen was not palpable. Upon the abdomen were seen a number of suspicious looking rose-colored spots. The abdomen was rather soft. Blood examination revealed a deficiency of leucocytes (5,500). At this time the Widal reaction was negative. Since admission the patient has rested comfortably. There has been a continuous high temperature, ranging from 102° to 104.4°, with comparatively little abatement despite repeated cold baths. The pulse has been maintained between 110 and 112. Respiratory increase is not marked, the respirations varying from twenty-eight to thirty per minute. There is at present little or no stupor. One may see that her face is slightly flushed but there seems to be an appearance of comfort. There is, however, a tremor of the lips and jaws and, as you may perceive, a smilar condition of the tongue when protruded. There are evidences on her lips of drying and some sordes may be seen. There has been a little delirium at night

and the patient has attempted to get out of bed. You see here upon her abdomen a considerable number of rose-colored spots which are two to four millimeters in diameter and fade readily upon pressure. You may notice also some desquamation. This is rather characteristic. There are no sudamina. The abdomen shows a slight distention and emits a rather tympnaitic percussion note. There is very little tenderness. The spleen is high up. The condition of the chest shows no impairment on percussion. There is no change of fremitus or of resonance. Sibilant and whistling rales are, however, noticeable at both sides and at the back. There is a slight cough. Rough sonorous bronchial sounds, quite characteristic in their tone, are present and their vibrations can be felt on the left side. This woman has been sick four weeks, yet her temperature is still high, the cough persists and, in fact, we have all the signs of typhoid fever. Within the last four days a new symptom has developed. She had at that time a chill which came on at night but was not followed by any rise in temperature. Physical examination on the succeeding day showed no important changes. Two days afterwards there was another chill, this time in the afternoon, and was followed by a slight rise in temperature but by no other changes. To-day there has been a third chill again without any increase whatever in the severity of her symptoms. In association with this case I wish to call your attention to the patient's respiratory symptoms and to the inspiratory symptoms in general of typhoid fever. To begin with, nose bleed is common as a primary feature, and may be very severe. It often relieves the intense headache. There may develop from the continuous inflammation of the larynx a severe ulceration, and in these cases an acute laryngitis. Ulceration is, however, very common and laryngeal stenosis may take place. Sometimes we have an enlargement of the cartilages with perichondritis and eventually a rupture of the cartilage. Paralysis of the vocal cords is not uncommon and has been found in a hundred consecutive cases. It seems to me that this lesion is due to a neuritis. Bronchitis is a quite common premonitory symptom. Such has been the case with this woman. Its severity may become so great as to mask all other symptoms. I have seen two such cases this year. Frequently it becomes in itself a very serious symptom, blocking up the small and finally the large bronchial tubes in a form of catarrhal pneumonia. The effect it produces may be such as to simulate acute miliary tuberculosis. I had such a case last year and was so far deceived as to form a prognosis of certain death. Pneumonia is not uncommon in typhoid fever, ushering in the disease by a chill. In all such cases there is a concentration of the bacilli within the chest. The symptoms are very like that of crucial pneumonia. At the time of the expected crisis the patient seems to get worse, the Widal reaction becomes positive and in a short time all the symptoms of typhoid fever are manifested. Secondary pneumonia occurs more commonly in the third and fourth week of the disease; its symptoms, however, are so mild as to be frequently overlooked, and is very rarely the cause of a fatal termination. Edemia and hypostatic congestion, the latter in severe and long-standing cases, may occur. Pneumothorax is uncommon. Pleurisy is very common, either dry or associated with sero-fibrinous exudate. The cause of the chill in this case is difficult to ascertain. Chills are not uncommon in typhoid fever and may usher in the disease. In the sudoral form of the disease the chills occur at intervals, followed by sweating. This is due to a reinfection by the typhoid bacilli. In nervous patients slight excitement may bring on the chill. This woman is not particularly nervous. The vigorous administration of the coal-tar products—the use of which have given way before hydrotherapy—will sometimes cause a chill. I have never seen such a case but many have been recorded. Chills may come on in the second or fourth week without any symptoms involving the organs. These cases are due probably to a reinfection by the micro-organism. In this woman the chill is due to no physical condition which we can perceive, but most probably to a liberation of the bacilli into the system. We have been able to find no malaria in her system and, moreover, the chills due to malaria do not as a rule manifest themselves until convalescence from typhoid or during the last week. This case is, therefore, one of mild typhoid fever. One may see the slightly dazed expression. She has diarrhea but no marked nervous symptoms; yet we must watch the case closely. The diarrhea is due not so much to intoxication as to a catarrhal condition of the bowel. The more severe the diarrhea the greater is the probability that the large intestines are affected. This is probably the condition of affairs in this instance.

The next case is that of A. J., ten years old, who is a school girl. Her family history is of no importance. She was sick some two weeks before admission, developing a headache and diarrhea. There was no sore throat at the onset. She is a spare, thin child, her spleen is enormously enlarged, and rose spots are evident, but no other marked symptoms. Since her admission she has been perfectly comfortable despite the fact that her temperature has been as high as 105°. The diarrhea has disappeared, the stools are soft and yellow. At the end of forty-three days the temperature fell to normal, but it has risen again and there is now a marked fever. In children as a rule the disease is of shorter duration than in adults. This brings us to the question of relapse. This is of three kinds, the true or ordinary relapse, the intermittent variety, and the spurious relapse. In cases of true relapse there is a period of normal temperature which lasts from five to seven days. There is then the characteristic step-like nose with marked nocturnal acerbations. The spleen again enlarges and rose spots appear. This attack may last as long as the original attack or may be even longer. As a rule its severity is not as great as that of the primary attack. In the intercurrent form of relapse the temperature never reaches the normal but rises during the defervescence of the primary attack to 104° or 105°. I am not certain whether there have not been in this case two relapses. On the fourteenth day the temperature was very near normal. It then took a second rise. This gradually went down not quite to normal and took another rise. I suspect, therefore, two intercurrent relapses. Yet there is but little emaciation and the condition of the patient has at no time been very serious. She has a prominent chest, some slight tympany of the abdomen, due probably to a lack of tone of the abdominal wall. The spleen though much smaller than upon admission, is still palpable. In spare children we may very generally take the size of the spleen as an indication of the length of the disease.

The next case, a man present—a somewhat different state of affairs. He speaks no English and we have consequently been able to get no history of any value. There has been some pain in the head and in the region of the spleen without any diarrhea. There are twenty or thirty pin point papulo-pustles in the axillary region. His diarrhea has given place to constipation. The temperature has come down to sub-normal for the

last few days. The Widal reaction cannot be obtained. He was thought to be well and permitted to get out of bed. That same night his temperature rose and remained up for three days. Since then his temperature has been remittent. There has been no splenic enlargement. This is a recrudescence or spurious relapse. It may be due to many causes. The bacilli are frequently found in the bile. If the digestion becomes in any way disturbed the bile flows into the intestines and may set up a reinfection. Indiscretions in diet, slight excitement or errors in digestion may be the causes of a spurious relapse. This is without doubt a case of false relapse. Freedom of diet must be again restricted and very close watch kept for complications. This case has at no stage been very serious.

The association of typhoid fever with other diseases is frequent. Commonly it is found associated with measles, diphtheria, noma and malaria. I had within the past few months a case of typhoid infection in an epileptic patient. During the course of the disease the convulsions of epilepsy were held in abeyance. In a case of typhoid in a choreic patient which also came under my care the choreic spells were abolished during the fever.

The fourth case is a man who has a good family history. He claims to have had an attack of typhoid fever at the age of ten, but this is doubtful. He has been in Colorado for ten months for pulmonary disease. His present sickness began nine days ago. There has been no nose bleed nor diarrhea. On admission he suffered greatly from insomnia and headache. On the abdomen are several large spots. The spleen is not palpable. Examination of his chest shows resonance and crackling râles. The râles were moist when the patient was admitted. There is a distinct flattening of one side. Perspiration is good. The interscapular region shows some impairment, there being a decided increase of fremitus. There is undoubtedly some trouble in the left apex. I thought at first of his tubercular history and suspected a general infection by the tubercle bacillus, but this has proved not to be the case. With the dropping of the fever his lungs have remained healed. Sojourn in Colorado has evidently cured him and we have simply a mild case of typhoid fever with approaching convalescence.

The cold bath as a method of treatment for asthenic diseases and conditions is growing in favor. Taking simply a woman who has fainted, the pulse is feeble or absent, the respiration is shallow, while sensation and motion are abolished, the patient's vital powers being practically dormant. The treatment which long usage has so sanctioned that even lay people constantly resort to it, is the application of cold water to the face or chest. Every one knows the result and even the youngest student in medicine can give its rationale. A reflex stimulus is sent to the nerve centers, which produces a deep inspiration, the machinery of life is again started, the color returns to the pallid cheek, the eye brightens, the pulse begins to beat again, and the asthenic condition is cured without further medication.

Take another example, we have a patient suffering from an infectious disease, he has a thready pulse, shallow breathing, the dull eye, the picking at the bed clothes, and even involuntary defecation. All these show us that we see the very apex of asthenia. Will drugs such as digitalis and strophanthus arouse a heart whose response is dependent upon dulled nerve centers? Strychnine can give us some help, for it has the power to stimulate the nerve centers. But place such patient in a shallow warm bath and pour with some force one or two basins at 75° or less over his head and shoulders, rub him gently, repeat if indicated and the improvement will surprise those who have not tried it. As one observer says, "There is a gasp for breath, the dull eye resumes its luster, the facial cyanosis yields to a better hue, the pulse becomes slower and less compressible. The wheels of life are again set in motion, not as in the case of syncope to remain so, but to again be overwhelmed by the toxic blood which supplies the nerve centers. Again and again this affusion must be repeated. Fear not the so-called shock, for this is just what you want to evoke. It is, when judiciously administered, followed by reaction, and reaction is the great stimulus, greater than all medicinal agents or alcoholic stimulants. These are clinical facts, observations made at the bedside. They are at least as reliable as those made on medicinal agents."

The action of cold water in these typical cases of asthenia can be thus explained. Heart failure stands at the bedside, the physician is anxious for he knows that heart failure kills. Why does the application of cold to the periphery restore tone to a drooping heart? Macey, Traube and other observers have proved that in these asthenic conditions there is a loss of tone in the smaller vessels, a paresis of the muscular coats, and of the elastic tissue which acts the part of muscular coat in the peripheral capillaries. It is well known that the circulation of the blood depends not only upon the vigorous, healthful action of the heart, but also upon the integrity of the arteries and capillaries, by whose elastic resolvency the blood is welled through the finest tubes. The propulsion of blood through such fine tubes would be impossible unless they were endowed with propulsive powers.

When this power is held in abeyance, the heart must increase its force to overcome an obstruction at points where it formerly received aid. It is pumping against paralyzed vessels; the blood stagnates in the smaller ones, giving rise to hypostatic congestion, and then is the difficulty increased. The heart labors harder; the pulse rate increases, and its tension is lowered. Its forces are exhausted and the heart yields at last to the dread pressure upon its vital forces, which are further sapped by the vitiated blood supplying it. By applying some hydrotherapeutic treatment by a cold affusion, dip, spray, ablution, a bath, adapting it to the case, always accompanying it by friction. The result is that there is a local stimulus to the coats of the superficial vessels; they contract again under the impact of repeated cold wave followed by friction. Their paresis is removed; they again propel the blood as was their wont. The dam is cut as it were, the blood again flows freely through the terminal vessels; the heart responds to the relief afforded by a slower and more deliberate contraction, higher tension, and absence of dicrotism. At the same time the central nervous system is bathed by cooler blood, blood which is better oxygenated, and thus there is double good done. The cardiac ganglionic centers receive a new stimulus at one end while at the other the task of propelling the blood is lessened.

The pale skin of an advanced typhoid reddens under this procedure and comes out glowing. In chronic conditions phthisis offers a good illustration of the effect of hydrotherapy in removing the obvious asthenic conditions. Ziemssen refers to cold baths as "a remedy of extraordinary value." But clinical demonstration of the "value of the cold bath in asthenic conditions" is most abundant. In many institutions there has been an

opportunity of testing the question in a satisfactory manner in cases of phthisis, Bright's disease, diabetes, and a variety of functional and organic nervous disease.

The gradual restoration of the reactive power in these cases together with the improvement of the nutrition offers most interesting illustrations of the results which may be accomplished by the application of cold water.

DIAGNOSING BETWEEN GONORRHEAL ARTHRITIS AND ARTICULAR RHEUMATISM.

BY M. E. FITCH, M.D., PHILADELPHIA.

IT is often puzzling to diagnose between these two conditions, both affections of the joints and frequently confused with each other.

To begin with, it is well to remember that rheumatic fever is almost invariably a multiple joint affection. The knee is the most frequent seat affected and next in order of frequency are the ankles, the elbows, the small joints of the fingers and toes, the joints of the spinal column, and lastly the hip-joint, which is very rarely affected. In rheumatic fever the joints are not permanently involved. The disease attacks a joint and remains in that joint for a day or two. All the symptoms then disappear from this part, and make their appearance in another joint. As this arthritis subsides resolution is complete, so that the joint which was red, swollen and tender, becomes in the course of time entirely well, leaving no traces of the disease. These facts stand in striking contrast to the gonorrheal type of infection. This is not as a rule a multiple joint infection, and if it does become multiple it is not so to any marked degree. The location which is first involved generally remains involved. The affection is very persistent. Although there may be an infection of other joints, the one primarily involved does not get well. When the symptoms do finally begin to subside they do so very slowly.

The temperature curve in the gonorrheal affection is very irregular and of a remittent type. The patient shows the signs of marked malnutrition. Rheumatic fever if left to itself runs its course in six to eight weeks, although a proper treatment shortens the attack to two or four weeks. Gonorrheal rheumatism, on the other hand, if not treated will become chronic and associated with a malnutrition of the joints, resulting frequently in ankyloses. The inflammation has a tendency to be destructive.

In spite of all these differential points we find that almost every day cases of gonorrheal arthritis are mistaken for chronic rheumatism. We should always inquire in cases of chronic rheumatism into the history of a urethral infection.

There are two periods in the course of rheumatic arthritis. The first is that of the joint affection itself. In some people we will find that the affection remains in one joint for some time before there is a change to a different joint. The nutrition of the joint by this long period of involvement becomes permanently impaired and may cause ankylosis. In this way not only the articular but also the periarticular strictures become involved and atrophy. The second period is that during which changes take place remote from the joint. There is some doubt among clinicians whether or not these changes bear an absolute relation to the rheumatism. The changes to which I refer are endocarditis and pericarditis, which are so frequently complications in rheumatism that it is considered by some authorities as a part of the disease and not as a complication. These changes are very rare in the so-called gonorrheal rheumatism but they may occur, especially the endocarditis. They cannot be used, therefore, as positive diagnostic points. There is but one fact upon which we can base an almost positive diagnosis, and even this, on account of the untruthfulness of some patients, is not absolute, that is a negative history of gonorrhea.

When gonorrhea becomes in a measure chronic, as in posterior urethritis, or gonorrhea of the uterus and Fallopian tubes the person may have recurring attacks of arthritis. Such persons do not, therefore, give us a history of recurrence with any history of reinfection. Such recurrences are also very common in rheumatic fever and their occurrence must not, therefore, be taken as a positive diagnosis of rheumatic fever.

There is another state of affairs which frequently puzzles diagnosticians. The individual who has been subject to frequent attacks of rheumatic fever from childhood may contract gonorrhea and develop a gonorrheal arthritis. Such a case it is next to impossible to diagnose and all we can do is to let it determine itself.

The cases which I have here are illustrative of the gonorrheal form of arthritis.

Case I.—The first case is that of G. H. He is twenty-one years of age, a laborer, and is unmarried. He was admitted to the hospital on the 26th of November. Neither his family history nor his personal history bear upon his present trouble. On admission he had no appetite, his knee was swollen, and his bowels constipated. He was nauseated but could not vomit. Four or five days previous to admission he developed pain in the left shoulder. Four weeks previous he had an attack of gonorrhea and on the subsidence of the discharge the rheumatism set in. The right ankle and both knees are mainly affected, although he complains of some slight pain in the left shoulder. He is unable on account of the extreme stiffness and pain to move his joints. His temperature is not significant but there are evidences of general constitutional disturbances. The left knee is getting well but the right ankle is still greatly swollen and there is a very extensive periarticular effusion. It is extremely painful to the touch and the patient cannot use it. The arthitis is of four weeks' duration and still the symptoms are those of an acute attack.

On admission we put this case on strychnine, milk, and the soft diet of the hospital. Subsequently he was given the extra hospital diet. To regulate his bowels we gave calomel and to induce sleep sulphonal was given. Digitalis was also prescribed. This treatment was subsequently stopped and sodium salicylate given in does of twenty grains four times daily. Unguentum gaultheriæ was applied to the affected joints. Indications showed that the digitalis, which had been stopped, had been of some use and it was subsequently renewed. Besides this we gave bichloride of mercury. The constitutional condition of the patient is much improved. The pulse is good and the precordial pains of which he complained and which came on at the same time as the pain in the left shoulder, has disappeared. There are no evidences of pericarditis. The tongue at the present time shows a marginal inflammation, the corrosive sublimate should therefore be withdrawn. Since the patient is anemic we shall stop all the medicine he is now taking and give him the syrup of the iodide of iron, thirty minims in water ——— times daily and increase this dose every day by one drop. If he bears this well we will gradually increase the dose two drops each day until the point of tolerance is reached. This is a drug which is very useful in gonorrheal arthritis.

Case II.—This is a similar case. U. D., forty-eight years old, a driver, was admitted to the hospital six

weeks ago. Prior to his admission he had an attack of gonorrhea. Shortly after this he sustained an injury to the right foot. Arthritis subsequently developed here and the swelling which set in still persists. In spite of frequent doses of sodium salicylate and bichloride of mercury he does not seem to get well, although he is somewhat better than on admission. I shall stop the present treatment and give him what I prescribed for the first case.

Case III.—This case is one of arthritis in a woman, the nature of which is still in question. A differential diagnosis in a case of this kind is of some difficulty and much interest. It is a case of a Russian woman, a multipara, who eight days after exposure to cold developed symptoms of arthritis in the knee and ankle, which became red, swollen, and very tender. At the present time this swelling has gone down, the redness almost disappeared, and the tenderness is very slight. These indications are against a diagnosis of gonorrheal arthritis. As the primary locations have improved other joints have become infected. Here you see the elbow is swollen, red, hot, and seems to be painful. The wrist is similarly affected. It was found upon examination of the vagina that there was a suspicious discharge in which we demonstrated the gonococcus. Thus the clinical symptoms and the microscopic findings point in opposite directions. The indications are in favor of gonorrheal arthritis but this is by no means positive. Ichthyol is being applied to the joints and we shall again give sodium salicylate, which had been given previously but abandoned. We shall see if there is any improvement under this treatment. If there is none the provisionary diagnosis will be confirmed.

THE PHYSICAL EFFECT OF MENTAL PERTURBATION AND ITS CURE.

BY SHELDON LEAVITT, M.D., CHICAGO.

THERE is a limit to human endurance, to go beyond which involves penalty. There must be a reasonable balance maintained between work and rest, activity and repose. The hours of sleep cannot suffer serious encroachment, for a prolonged period, without resulting physical disturbance. But a man in ordinary health can bear without harm eight or ten hours of agreeable labor, day in and day out, for an indefinite time. Men are often mistakenly said to wreck their health by overwork. The truth in such cases usually is that the health was destroyed, not by overwork, but by unhygienic living and consequent mental and nervous derangement. The course of such a case can be traced backwards to an initial period of natural fatigue, which was grossly disregarded and aggravated by added dissipation, or was temporarily masked by the energizing effects of a stimulant which afforded an artificial aid to still greater exertion, until resulting asthenia was finally reached.

But when one falls into the state of nervous depression which always runs convergently to a course of impaired physical vitality, worry, in one or more of its various forms, finds entrance, and the process of disintegration goes on apace. Machinery runs without serious wear as long as it runs smoothly, but when the bearings begin to chafe and grind, unless the cause be removed without delay, the day of its integrity soon ends. Horace Fletcher, in his "A B C of True Living," says that anger and worry are the causes of all human misery and their elimination from human hearts would usher in the millennium; and I believe him quite right. But worry alone may be regarded as the real offender, since anger is an emotion that springs from worry, which in turn is only another name for fear. Mental unrest debars happiness, encourages melancholy and poisons the body. Science has clearly demonstrated the toxical effects of these emotions, prolongation and repetition of which may ultimately destroy life. Many men and women are hastened to an untimely end by the mental states that they cherish, emancipation from which they could have obtained without going outside the scope of their own powers.

What I mean to say is that worry, with all its allies, can be driven out of the mind and tranquillity installed if one but resolutely set one's self to the task. For a time it will require the greatest vigilance to shut the door against the intruder, who sometimes comes in deceptive garb and is liable to deceive the very elect; but if no aid nor comfort be afforded this enemy of human health and happiness, and it be resolutely denied admission, one will ultimately enjoy a gratifying freedom from assaults, and will find one's self in undisputed control of both mind and body.

Nor have we reason to fear that lack of anxiety concerning the future will betray us into improvidence. In every normal mind there is an innate desire for the things which are capable of ministering to its comfort or convenience amply intense to incite diligence and economy. There is a vast difference between a conviction of the wisdom of provident living and a harrowing anxiety about the future: the one tending to arouse to healthful activity and the other either to depress into morbid inaction or to incite to unwise doing. The best results are obtained by those who are able to take a tranquil view of both the present and the future and to act upon the deductions drawn from undistorted environment and uncolored prospects.

It is easy to win battles on paper, or with tin soldiers; but not so easy with real soldiers against a stubborn and wily foe. In times of peace, confidence in our puissance and prowess reach their highest level. We become inflated with conceit, and fancy ourselves easy victors. But once the tug of war is really upon us, everything wears a new aspect. When favorably situated, when there is "none to molest or make us afraid," and the living wheels run smoothly, it is an easy thing to avert worry; but when the grind of annoyance sets in and troubles of divers sorts assail us, it is quite another thing. And yet, even under the heaviest stress of life, the soul that is fully resolved to preserve its poise can do so. The greatest trouble arises from lack of an unwavering purpose. The man who is under the domination of a foolish and harmful habit, such as that of smoking or drinking, often weakly declares his inability to become his own master. Why is this? How can a mere "way of doing things" become an element of so great power? How can the mind become a slave to its own mode of action? We do not have to search far to learn the cause. The weakness lies in lack of full, unequivocal resolution, long maintained. We commonly say that the volition of such a one is so weakened that he cannot sufficiently assert himself, and this is quite true; but the difficulty lies not so much in volitionary astheny itself as in the feeble way in which the volitionary powers are attempted to be exercised. They have been weakened through desuetude. The subject assays merely *to try*, rather than to *do* and to *succeed*. He makes a tentative effort to see how he may feel under the new order of things and casts backwards many a furtive glance that weakens his purpose and is certain ultimately to work his defeat. I venture to assert that

there is enough mental and moral strength left in every man, no matter how addicted he may be to evil habits, nor how weakened by submission, quickly to subjugate every adverse tendency if he will but use it.

Now this is the life history of worry. In one's attempt to defeat it by making one's mind invulnerable, there is not always the unwavering purpose to persevere which alone can bring success. The average man is likewise handicapped by weakness in pursuing a designed purpose to overcome bad habits of eating and drinking, even though well convinced that failure only binds the incubus of disease more closely upon him. Less than a week ago a gentleman in good business came to me complaining of the symptoms which always precede a general breakdown of the nervous powers. On inquiry I found many defects in his manner of living, correction of which were essential to prevention of the impending downfall. He did not hesitate to admit that they acted an important part in the causation of his illness, but was reluctant to surrender them because of the self-denial involved. Before leaving, however, he acceded to my demands and gave me his explicit promise that he would faithfully follow the regimen marked out for him until the next visit, which was to be made on his return from a trip to the South then about to be undertaken. I fortified him in every possible way against failure by pointing out the ultimate results of a successful effort, and sent him off with confidence. But the dominion of a simple habit over a yielding purpose is clearly shown in the fact that this man, who is possessed of much business energy and acumen, and is of a resolute temperament, deliberately gave way to his appetite, according to the testimony of his much worried wife, and fell into his old way of living on the day succeeding his solemn vow.

It is with such half-heartedness that many set out to conquer that great disturber of peace and health, worry, and then bemoan their wretchedness. It is not uncommon to hear such people, even during the period of their assumed struggle, when the subject of relief from mental strain and irritation is under discussion, take a stand in opposition to faith in the possibility of relief, at once betraying their want of sincerity in their alleged attempt to secure emancipation. How can one hope to succeed in an endeavor as long as he feels a woeful lack of faith in a successful outcome? The chiefest essential of success in an undertaking is sincerity; without it one is in a mere masquerade from which no genuine advantage can possibly accrue.

But let a man set about ridding his mind of disquieting and damaging habits of thought, holding before himself a clear image of a successful issue, and the result is bound to be to his liking. In general the process is exasperatingly slow, but in those who, by previous discipline, have learned self-control, the way to achievement will prove surprisingly brief.

A word now with respect of the relation between our mental and physical states. I have yet to find a physician of education and experience who denies the profound influence of the mind over organic function and general metabolism. The phenomena of morbidity point too plainly to mental states as etiological factors to admit of question. Indeed, the origin of all disease, some are ready to contend, is in mental modifications—modifications, to be sure, not always rising to the plane of consciousness, but none the less real.

The question of responsibility for unconscious idealism, and the possibility of relief from its pernicious effects, is one which should be settled. This involves a consideration of the power of auto-suggestion over the subconscious mind, which ordinarily controls the vital processes of the human organism.

I assume it to be quite unnecessary in a paper of this character to do more than postulate the demonstrability of such effect. The involuntary muscular system and the functional action of the various organs do not promptly respond to volitionary command as do the voluntary muscles, and it is vitally desirable that they should not, since otherwise coördinate action would be in danger of serious disturbance as the result of mere whims. But this does not justify the inference that the relatively automatic processes are beyond the power of conscious will. Vital changes, when undergoing rapid movement, quickly reach the danger line. They ought to move with deliberation, and usually do. It is this slow, but progressive action that the conscious will is able to influence, in its relation to particular functions, when repeatedy impressed with that purpose.

I could give many instances illustrative of the power that may be exerted by objective over subjective mental processes; the domination of the physical by the subliminal. We exalt the character of thought, declaring its high potentialities, its superlative powers, sometimes neglecting to supply proper emphasis to volition, which is the irresistible energy behind it. Thought itself is but a means with which we can achieve, just as is manual movement; both owing their results to the masterful purpose, the determined will which gives direction and insures the designed effects.

The conclusion we draw then is that worry, with its whole brood of harm-working coadjutors, may be eliminated from individual experience if we will but bend our efforts to the purpose. But they must be wholehearted, constant, protracted; anything less will work failure.

Let a troubled soul, weary of his burden, "seeking rest and finding none," resolutely drop them and resolve never again, under any provocation, to take them up. Mark the change in such a one; his oppressed physical organism begins at once to resume its old-time comfort and elasticity; the eye becomes brighter, the countenance smoother, the movements lighter, and the whole being, unless impeded by serious malady, speedily finds its norm.

Is this picture too highly colored? I trow not.

ACUTE MASTOIDITIS.

BY C. C. BOYLE, M.D., NEW YORK.

ACUTE mastoiditis is secondary to an inflammation of the middle ear, and its frequency of late years seems to be dependent in a great degree upon the prevalence of la Grippe, although it may follow a cold in the head or an influenza. Mastoiditis is preceded by the ordinary symptoms of inflammation of the middle ear, such as pain accompanied by more or less fever. The pain is very severe and is not generally relieved unless perforation of the membranum tympanum takes place, followed by a free discharge and a gradual subsidence of all symptoms. It is especially in those cases where the membrane does not perforate or an opening is not made by the knife, that we find an extension of the disease to the mastoid antrum, although it may go on to a mastoiditis in spite of a free opening for the discharge. This is due to the fact that there is a direct communication and a continuity of the lining membrane of the tympanic cavity and the mastoid antrum, the inflammation and suppuration extending from one cavity into the other. The inflammatory condition

gradually increases until we have well-pronounced symptoms of mastoiditis, such as redness and swelling of the skin covering the mastoid process accompanied by pain, which is intensified by pressure. At this period there is generally a rise of temperature. It is at this stage that the disease commences to assume a serious nature, and if the intensity of the symptoms continue to increase in spite of treatment, it then becomes necessary to operate without further delay, as there is more danger at this stage in not operating than there is in operating. A delay in operating has sacrificed more than one life that might have been saved.

The operation consists, first, in making the surrounding parts aseptic, then you take a strong scalpel to make the cut through the skin covering the mastoid, commencing the incision at the tip of the mastoid process, carrying it upwards posterior to the auricle about one-half inch from its posterior attachment, until the superior auricular attachment is reached, when the cut is finished by changing the course of the knife about half an inch forward. Then the periosteum, after it has been cut through, is separated from the bone by the periosteum elevator, the part in front being pushed forward and the posterior flap backward, thus exposing the bone of the mastoid process, the seat of the operation. Now it is necessary to locate the exact spot before going further, as otherwise you are apt to open the lateral sinus, or enter the middle fossa of the skull. The point at which you commence to use the chisel, by which the opening is to be made into the antrum, is a level with the superior border of the external meatus and three-eighths of an inch back of its posterior wall.

After determining the important point you cut away the bone with chisel and mallet, cutting little at a time, keeping close to the posterior wall of the meatus, until you reach the cavity of the antrum, which is usually indicated by the appearance of pus. This caution is necessary as the lateral sinus is not always located where it is supposed to be, as it may be more forward on account of the mastoid antrum being smaller and narrower than usual, the anterior wall of the lateral sinus being formed by the posterior wall of the antrum. It may be necessary to cut away this wall and expose the lateral sinus for inspection if you have symptoms pointing to its infection, in the form of a septic thrombus.

After having cleaned out the antrum, and opened up the cells of the mastoid process down to its tip, where you are apt to find pus, the wound is made aseptic and packed with iodoform gauze, on top of which is a layer of ordinary sterilized gauze. Before doing this the upper part of the incision in the skin may be drawn together by a couple of sutures, the lower part being left open to heal after the bone cavity has closed. Unless symptoms arise indicating fresh formation of pus, the wound is not opened for three or four days; after that it is cleansed and packed daily until healed, which takes from four to five weeks in this operation known as the Schwartze. It is the simple operation distinguished from Stacke or radical operation which is more extensive and consists of making one large cavity, by cutting away the bony partitions separating the external meatus, tympanic cavity, mastoid antrum, and possibly the lateral sinus. This latter operation is indicated in chronic cases, where there is more diseased bone, and frequently symptoms of septicemia. In the simple operation these partitions are not disturbed nor are the ossicles or membranum tympanum; and patients usually recover with very fair hearing considering what they have gone through. As the result of the operation there is an ugly scar left which grows less with time but never entirely disappears. The cause of death in mastoiditis if not operated upon early enough is either septicemia, septic meningitis, septic thrombosis, or cerebral abscess; the most frequent location of the latter being in the sphenotemporal lobe of the cerebrum, which is directly over the roof of the tympanic cavity. Less frequently is an abscess of the posterior lobes of the brain. In considering these cases the question arises can we check and cure them without an operation? Yes, undoubtedly we can, and I think a great many are operated in too much haste. Perhaps some may err the other way, expecting remedies to cure when symptoms have appeared that mean death to the patient if not operated immediately. Recently I visited a large hospital, where over ten thousand ear cases are treated yearly with many mastoid operations. I asked how long they delayed operation in cases of mastoditis. The reply was if symptoms did not abate in twenty-four to forty-eight hours operation was advised. The only local treatment was the ice coil, irrigation with warm water, the ear covered with cotton, and patient put to bed. In regard to the use of the ice coil, some do not advocate it very strongly, for the reason that while it undoubtedly relieves pain, it has the disadvantage of masking other symptoms, so that, while the patient is apparently better, the disease is progressing without warning.

Now, the question is, can we with the aid of internal medicine do better? From my personal experience in these cases I think there is no doubt of it. I have checked and cured cases with well-marked mastoiditis by the administration of the indicated remedy, at the same time keeping the ear free of pus by the use of hydrogen peroxide. I have not used the ice coil, but think it might be beneficial in the initial stage, but not after pus has formed. The ear and that side of the head is well covered with cotton held in place by a cap with strings tied under the chin. Before putting on the cotton the mastoid process should be covered with a layer of vaseline. The remedies usually used in these cases are Ferr. phos. in the beginning before the formation of pus and then hepar sulph. is indicated. When the mastoid becomes tender and swollen capsicum is the remedy or it may be alternated with the former remedy. In the retrogressive stage when the discharge of pus becomes thinner and less, I give silicea. I am a strong advocate of operating in this affection when the symptoms indicate you have waited as long as the safety of the patient will allow, but if in doubt, I operate immediately, there being more danger in delay than in an unnecessary operation.

URINARY FEVER.

BY GEORGE L. HARBOUR, M.D., OF VOSSBURG, MISS.

VARIOUS names have been applied to this disease —such as urethral fever, catheter fever, shock, urinary poisoning, uremic poisoning and urinary infection, names that suggest the various and conflicting views held both of the etiology and pathology of this condition which, indeed, still remains unharmonized.

The object of this paper, however, is not to suggest a more appropriate name than has heretofore been given, but one that is more liable to cover the field of infection, operation and treatment.

By the term "urinary fever" I wish to denote the febrile disturbance and accompanying phenomena set up by instrumentation of the urethra or bladder or by operations upon the urinary organs, or by impressions

brought to bear upon the urethra or bladder, by other means.

Furthermore, the morbid phenomena evoked by instrumentation of the urethra and bladder may, if not already, become so wide-spread as to include septic inflammation of the renal pelvis; the kidney itself, so to speak, may become involved and the result of same manifesting itself in pyemia, or it may bring about acute uremia with its attendant consequences, viz.: damming back into the circulation a part, if not all, of the poisonous elements of the urine, often terminating in death from uremic toxemia. In most of these conditions, if not all, some previous disease existed either in the kidneys, bladder or urethra; the instrumentation merely having served to convert a chronic disease into an acute and often highly dangerous condition.

To my mind much of the confusion in the past, and to some extent still existing, in reference to the pathology of urinary fever has arisen from the mistake of describing the various inflammatory and septic processes set up in abnormal urinary organs, by instrumentation and attempting to harmonize these with the temporary fever induced by instrumentation of the urethra and bladder.

We may, for instance, have all the conditions present which tend toward the development of septic nephritis such as obstructive cystitis or ascending pyelitis. The use of the catheter under such circumstances, especially in elderly men is very apt to at once evoke acute (septic) interstitial nephritis resulting in death. While the exciting cause in such a case was due to a great extent to instrumentation, it merely served to convert a chronic into an acute septic disease.

By urinary fever, as considered just here, is meant the elevation of temperature and accompanying symptoms evoked by the passage of a sound or catheter, by operations or other impressions made upon the lower urinary tract, the kidneys and urinary organs being free from disease. The passage of a catheter into a healthy urethra, when the kidneys and bladder are perfectly healthy, may evoke symptoms and results of all grades from a mere faintness, recovered from in a few minutes, to a violent chill, followed by a rapid elevation of temperature from 103° F. to 105° F.; accompanied by suppression of urine, convulsions and sometimes terminating in death in from six to forty-eight hours.

Morris and others have placed great stress on this and have especially pointed out that the nervous connections with the genito-urinary tract are so peculiarly constructed, that, if a local irritation be at all pronounced, especially in the female, I might add, conditions are favorable for the most widespread nervous storm to prevail over the entire sympathetic and cerebrospinal systems involving the cardiac, pulmonary and renal circulation to such an extent as to induce syncope, impaired respiration, acute renal congestion and last, but not least, convulsions and even death.

But even the slighter forms of local irritation (induced by the degree of instrumentation) as the gentle passage of a sound for the divulsion of a stricture, is as likely to evoke an attack of urinary fever, as an operation upon the urinary organs of very considerable extent, such as lithotomy. As to the urine, the quantity is more or less diminished in this fever, as in that of others, but as a general rule the diminution is very much so in this fever—the suppression lasting in many cases from one to three days—complete suppression being the exception.

So it is during the febrile period, while during the intervals it is just the reverse—in character, bloody or smoky in appearance; acid reaction; specific gravity lowered.

The most striking point is the diminution of the solids, more especially the urea. The quantity of blood, as a diagnostic point, is misleading in many cases; it varies from the power of a microscopical detection to that of a marked hematuria. Albumen is always present, ranging in quantity from one to two grammes per litre. Though in many cases we find two or three times this amount, associated with casts, which is of a grave significance.

CLINICAL FEATURES.

After passing a catheter, sound or some other manipulation on the lower urinary tract, in from a few minutes to several hours' duration the patient is suddenly seized by a chill; from that to a violent rigor accompanied by vibrations of the limbs and body, chattering of the teeth, with a rapidity similar to that of an electric battery, pain in the back and limbs, cold perspiration, a sense of fatigue or complete exhaustion. Temperature rapidly rising, from three to five degrees or more, accompanied by headache, injection of the conjunctiva, nausea, vomiting, dyspnea and cardiac irregularity, with delirium. The pulse becomes rapid, hard and tense. After a time, a pronounced perspiration succeeds, lowering the temperature, accompanied with more or less relief to the patient; pulse grows less frequent and tense as the fever abates; but the thirst still remains intense.

In from six to twelve hours the fever subsides, leaving the patient in a weak condition; in cases where there is a definite lesion the attack may be repeated; otherwise the patient rapidly resumes his normal condition, and convalescence is established in a few days.

Now, the question arises as to the differential features from pyelonephritis and suppurative nephritis.

Urinary fever is distinguished by a sudden onset of the latter with a brief and rapid duration of the fever; by the history of the case, in regard to the kidneys, bladder and lower urinary tract, as to whether previously in a healthy condition.

From uremia it is a more difficult task to make the distinction as suppression may occur for several days, thus poisoning the blood from uneliminated waste products, terminating in death, at least, in part, from uremia.

The absence of coma and convulsions, etc., excludes uremia. Septicemia is distinguished more readily by its slow onset, resembling typhoid fever in character and by its continuous progressive course without intermission.

HEART DISEASE IN PREGNANCY.

BY R. E. JONES, M.D., CRYSTAL SPRINGS, MISS.

IT is not my purpose to enter into general study of disease of the heart, nor to study in an exhaustive way its lesions in their effect upon the pregnant woman. The report of a case of mitral insufficiency, showing failure of compensation, its progress and its results, I trust will be of interest to the Association. This case has not been selected for report because of the belief that the best methods have been used in its management. Too often, possibly, we select cases for report, the management of which we consider faultless—fully up to the teachings of our best authors, and followed by the best results, when, maybe, a report of those followed by bad results, with a question in the mind of the physician as to propriety of the courses pursued, would be of more interest.

Nature, not satisfied with the many diseases peculiar

to woman, and the many complications of the pregnant state, makes her, like man, except, perhaps, in a smaller per cent. of cases, a subject of heart lesions; she, however, in an unequal degree, because in her province of child bearer, new life and increased activity are given to the diseased process. The sound heart in a pregnancy, normal in every respect, because of the increased demand made upon it in the preparation for the changed conditions, and furnishing nutrition for the growth and development of a new creature, by a wise law of nature, undergoes an increase in weight of about one-fifth. If, in the normal state and in the normal heart it is necessary for the left ventricle to undergo this physiological hypertrophy to meet these demands, what may we expect in a pregnancy with organic heart lesion?

The thought of the possible existence of a heart lesion in any one, under any condition, carries with it a feeling of intense alarm, yet the fact that all organic heart lesions may compensate by hypertrophy, and give fair length of life to the individual without his or her knowledge of its existence, is a fortunate provision of nature. The conditions existing in pregnancy, the increased metabolism with the large amount of effete matter circulating in the blood, often tax the healthy heart and eliminating organs to their utmost capacity, they being such as to make it of rare occurrence to meet with other than complicated or pathological conditions.

Add to these conditions the rapid progress made by malignant, tubercular, and other diseases, even in those of sound hearts and under favorable circumstances, and we need not feel much surprise that the mortality has been so great as to lead some of our best authors to advise all women suffering from organic heart lesions not to marry.

Mrs. ———, white, age 38, married; occupation, housekeeper. Had scarlet fever, measles and diphtheria in childhood. Has never had acute rheumatism. Her only confinement at term was sixteen years ago, with normal labor, but it was followed by difficult breathing, and she is said to have been treated for heart disease.

She aborted, without apparent cause, about one year ago, at three months; no sepsis; no other difficulty.

She began to have chills and fever in July of last year, with recurrent attacks until November. On December 11th, the day after her removal from a neighboring town, riding on a wagon a distance of ten miles, I was called to see her. She was very anemic, with slight edema of face and limbs and had a severe cough with fever, which she attributed to taking cold. She was very nervous, and was about six months pregnant. I gave her something to relieve her temporarily, expecting to see her the next day. Her husband reported her better the following day, and thought it unnecessary for me to see her, notwithstanding the fact that he was informed that her condition was bad, and she would need treatment. I was not again called to see her until January 7th. Her condition at this time was very much worse, anemia and edema greater, and on account of paroxysms of dyspnea and cough, it was with difficulty that she was able to lie down. Her appetite and digestion had been bad for some time, and she suffered from nausea. Examinations revealed mitral insufficiency, with a laboring heart, pulsating at the rate of 120 to the minute. There was lividity of nails and lips, with anxious and distressed facies, urine scanty with only a trace of albumen.

Seeing that there was failure of compensation in the heart, and the necessity for early relief, and having observed on other occasions in similar conditions the wonderful effect upon it of depletion and elimination, the heart gaining strength under purgatives, etc., that under other conditions might be feared depressing, efforts were made to relieve the burdened organs by the use of such means. In the same way we hoped to eliminate the toxins, lessen the hydramnion and place the heart in a condition to relieve the congestion of, and interference with, all eliminating organs and the digestive apparatus.

Anemia, which was probably the result of chronic malaria, previously suffered, was considered an important factor in the failure of compensation, and as the condition was such as could not soon be relieved, it was evident that she could not live to the end of term undelivered. The hope, however, was entertained that she would be placed in a condition to bear the induction of labor, and at a time when there might be a chance for the child to live. The extreme anemia and generally bad condition of the woman, however, led me to believe that the child would not live at any period of pregnancy.

She was fed upon sweet milk, buttermilk, egg albumen, toast and broths as well as a bad stomach could be induced to take them with calomel, sulphate magnesia, cream tartar, digitalis, strophanthus, strychnia, etc., being forced to use such as could be retained.

On the 19th, there being no material improvement in her condition, after twelve days of the best attention that could be given; and she having had, from the description given me, attacks of convulsive movements, I decided that the time for induction of labor could not be longer delayed.

The attacks as described were neuralgia, and suited somewhat the description of angina pectoris, except that the pain went to right shoulder and down the right arm.

I therefore had my associate, Dr. J. M. Dampeer, to see her with me, and he concurring fully as to that being the only means to save the life of the woman; after aseptic preparations, and choosing Scheet's method, I dilated the os sufficiently to rupture the membranes, which I succeeded in doing high up, so as to have the water to slowly pass away; serving the purpose of saving the woman possible syncope, too long pressure upon the child and a dry labor. I know that the introduction of the soft bougie, Krause's method, is considered the best of all methods, labor, as a rule, coming on in twenty-four to forty-eight hours, and if care is used, the membranes are kept intact and the danger of sepsis lessened. This method would have been used but a suitable bougie could not be obtained.

I had succeeded so well on a former occasion, when rupture of the membranes was done for incessant vomiting at eight months, with threatening collapse—labor terminating in two hours—that I thought there would not be much risk anyway in the use of the method in this case.

I thought, also, that in case of too long delay in the appearance of labor, or of untoward symptoms from any cause, that I could by forcible bimanual dilatation, or the use of Barnes bags, deliver at any time in a short while.

The next day, 20th, no pains, pulse improved, temperature 98½°, slept well through the night, with no vomiting; 21st, pulse 110, temperature 99°, no pains, vomited once in the twenty-four hours, cough greatly improved, water occasionally passing from uterus; 22d, no pains, pulse 108, temperature normal.

While her condition seemed improved, since rupture of membranes, the difficulty of maintaining asepsis under surrounding conditions led me to fear longer delay.

As we were placing her in position for cleansing the parts preparatory to use of further dilatation she had a spell of difficult breathing with momentary loss of consciousness—the first that I had witnessed. At 9 a. m., the seizure over, a fair degree of dilatation was accomplished by manual means, and a rest given to await the appearance of pains.

At 2 p. m., there having been only slight pains, a medium sized Barnes bag was introduced and gradually distended with warm sterilized water, which was immediately followed by pains. In a short time the largest size was introduced, and pains were strong, and at short intervals as long as the bag was kept in position, with good water pressure.

At 5 p. m. she was delivered of a poorly nourished, dead child, having had an easy labor, at the close of which the pulse was 108, temperature 99⅕°; 23d, slept well through the night, temperature 98½°, pulse 108; 24th, pulse 110, temperature 99⅖°, appetite good, had taken buttermilk freely without vomiting; 25th, breasts giving pain, pulse 118, temperature normal; 26th, pulse 120, temperature 99½°, had this morning another spell of neuralgia except that there was no loss of consciousness; in the evening the temperature arose to 102½°, pulse 132. After this time the temperature was only a little above normal, with daily improvement in her condition.

She was placed upon general tonic treatment; steadily improved, and in a short time her health was fully restored, showing perfect restoration of compensation.

The result in the case of the woman was as good as could have been desired. What Krause's method would have done for the child we do not know. It is presumed, however, that ordinarily it is safer to both mother and child than the method used.

The delay in the occurrence of labor in this case, while the woman may have gained strength thereby, adds to the existing evidence that Scheet's method cannot be relied upon for speedy delivery.

PUERPERAL SEPTICEMIA.

E. M. POND, M.D., RUTLAND, VT.

IT is not my intention in this paper to go into the full details of puerperal septicemia, but simply to call attention to a few points I have observed in private practice. It has been my fortune or misfortune to see many cases in consultation. Puerperal septicemia is a preventable disease; it is a wound infection and arises from septic materials being carried into raw surfaces at the time of confinement. A woman may be confined in an infected house with septic cases around, with even contagious diseases, and yet if the confinement is aseptically carried on no infection will follow. She may, of course, contract diphtheria or scarlet fever, but they will run their course as such and not as septicemia. If, however, these poisons are introduced into the wound by the physician, assistants or by instruments or dressings, we then have septicemia with all its pathological changes. While, as a rule, the physicians or attendants are at fault there are cases in which it arises from causes within, such as pus tubes, pelvic abscesses, etc.

I saw one such case, a woman of about 40, who had had five children, the youngest being 3. I saw the case before pregnancy occurred and diagnosed a pus tube of the right side and urged an operation. The tube was quite large and fluctuation was marked. I told them should she become pregnant it would be a source of danger.

The time for operation was set, but she changed her mind and also physician. Some time later she became pregnant and was delivered. The family afterward told me that a day or two later she became very sick with peritonitis and died a few days from the time of confinement. In my mind there was little doubt that the cause of death was a ruptured pus tube.

These cases, however, are rare, and when a physician has a case of septicemia it is generally from preventable causes. A confinement should be conducted as carefully as an abdominal section, the most thorough asepsis should be observed throughout the confinement and also during the convalescence. Pads of sterile gauze should be used and not those so often prepared by the family. The douches postpartum should never be used, except possibly one directly following the delivery of the placenta, or where instruments are used, except as symptoms demand them. The uterine cavity is supposed to be aseptic, white; the vagina is not; by reversing the flow and carrying secretions from the vagina to the uterus we may favor infection. For those who have not used the Sims position for delivery I would suggest that they try it. The parts can then be kept under the inspection of the physician and by the free use of sponges of absorbent cotton they can be kept clean.

Another source of infection is that the family are not prepared with proper dressings, and the physician does not carry enough of the necessaries of confinement with him. After delivery the parts should be thoroughly inspected by a light and digital examination. Lacerations and contusions should be treated as wounds in other parts of the body.

A normal confinement should be followed by no fever, and when it does occur there is something wrong. The so-called milk fever that occurs on the third day should not occur and is generally due to either absorption from the intestines or sepsis. If a cathartic does not clear it up, no time should be lost in finding the cause.

Whenever fever or a rapid pulse is found, it should be considered as septic and thus treated, unless a definite cause is found. The uterus and adjacent tissues are so richly supplied with lymphatics that if the infection is not stopped at once it may soon be beyond our reach. Here more than in most diseases the old saying "that a stitch in time saves nine" holds true. In making our diagnosis we must remember that the infection may be from a lacerated perineum or vagina; if so we may have pain in the thigh or groin radiating to the knee, or we may have a phlebitis of the leg; if we remember our lymphatic supply we will at once see why.

The infection may occur from the cervix and an abscess in the pelvic cellular tissue result, and lastly the infection may start in the uterus possibly at the placental site and extend either by the tubes or lymphatics to the pelvic peritoneum; as a result we may have purulent salpingitis-ovaritis or peritonitis. By recalling these complications we see at a glance that the generally adopted routine of curettement and irrigation of the uterus is not in many cases the whole treatment and that many demand an early vaginal or abdominal section together with attention to the endometrium. And here I may say that gauze packing filling both uterus and vagina with an ample pad over the vulva is always of advantage in promoting drainage.

We have a form of infection, sapremia, that occurs in many cases; this generally arises from pieces of membrane or clots being retained and is promptly relieved by uterine irrigation; if allowed to go on, septicemia would follow.

The diagnosis at times is difficult, but unless a pos-

itive cause is found these cases should always be treated on the supposition that they have septicemia.

I delivered a woman a few years ago, using every aseptic precaution; however, on the third day she was taken with a chill—a temperature of 104° and pulse 140. She had had malaria and had had attacks like this at intervals. As a safeguard the uterus was irrigated and the patient carefully watched. No cause was apparent. The fever and other symptoms subsided under malarial treatment. This attack was like her former ones, but coming on under such conditions it gave me some anxiety, although feeling confident as to its cause.

One of my friends attended a young woman in her first confinement. It was carefully done and every precaution taken; a tear of the perineum was sutured; on the third day there was a rise of pulse and temperature. The following day I was hurriedly called and found the patient with a temperature of 107.5° and pulse 150 or more—the abdomen was distended and general symptoms of sepsis were present. Ether was given—the perineal sutures removed and the wound reopened—the vagina and uterus were thoroughly cleansed and curetted. Careful examination showed no signs beyond the uterine cavity—vagina and perineum. After thorough irrigation with bichloride and saline solutions and hydrogen peroxide, the uterus and vagina were packed with gauze and a large vaginal pad applied. This was repeated twice daily for a week or ten days. The temperature and pulse began to drop at once and she made a good recovery. General treatment was, of course, followed out.

While a high temperature is alarming, it is oftentimes not as dangerous as a low temperature and rapid pulse. The pulse after confinement should be carefully noted and an increase in frequency should always be considered a danger signal. It is far more alarming to see a rapid pulse than a high temperature, and any increase in pulse rate should be looked upon as a danger signal.

Infection, as a rule, occurs during the first week, and the pulse and temperature should be recorded morning and evening during at least the first week. The careless method of attending a confinement and then making but one or two visits should not in these days be countenanced.

I have seen two cases of septicemia following two and three weeks after confinement. In each case had the patient been up and around, and in each case there was an old retroflexion with improper uterine drainage. Dilation, curettement, with irrigation and gauze packing, effected, after a time, a cure. The case occurring three weeks after delivery had gradually rising pulse before signs of temperature occurred.

I remember two cases of infection taking the form of so-called milk leg; in each case the temperature was low and the pulse high, the uteri gave but little signs of involvement and the tubes, ovaries and pelvic peritoneum appeared normal. Both cases died. In such cases the uterus should have, of course, attention, but septic wounds should also be looked for around the perineum and vagina, and while the infection is beyond, all surfaces should be cauterized or dressed surgically. General treatment should be energetic and should include the use of antistreptococcic serum. While the results of this serum art at present undecided, sufficient good has been done to warrant their employment as an aid to other means.

At times a patient may have grave symptoms, a rapid pulse of 140, a temperature of 104° to 105°, and yet physical examination remain negative. In these cases there may be a small abscess of the ovary or other parts. A case reported a few years ago illustrated this: The case, one of puerperal septicemia, ran a long course; for five or six weeks the pulse was about 140 and temperature 103° to 105°. The physical examination was negative. Finally an exploratory incision was made and an abscess of the ovary found; it was small and contained less than one-half dram of pus. An immediate recovery followed.

Acute disease may often complicate the puerperium. Appendicitis may develop or pelvic peritonitis or pelvic abscess may simulate it. I was called to see a young woman who had been delivered about ten days. She had been doing well, and was up and around. She was suddenly taken with sever pain in the right side—the lower right rectus muscle was rigid and local tenderness present over McBurney's point. By vaginal examination the uterus was found fixed and a sensitive indurated mass felt in the posterior cul-de-sac. I saw her again two days later; the mass had softened and deep fluctuation was noted. An incision in the posterior cul-de-sac was made per vaginam and about one-half pint of fetid pus removed. The patient made a slow but perfect recovery. These cases often remained well afterward.

At times the vulva, vagina and uterus may be covered with a membrane simulating diphtheria; sometimes the bacteriological examination shows the Klebs-Loeffler bacillus, in other cases not.

I was called to see a young woman after her first confinement; she had been sick about a week. Upon bimanual examination the uterus was found large and soft, but the peritoneum was free. By inspection the vulva, vagina and uterus were covered with a white diphtheritic membrane; the parts were soft and bled easily; the pulse was rapid and the temperature low. She died a few days later. The physician who attended her had two other cases of puerperal septicemia and also had several cases of diphtheria. This simply illustrated the care that should be taken when one has contagious or septic diseases. If a physician has had a contagious or septic case, how soon ought he to attend a confinement case? Just as soon as he has rendered his clothing and person aseptic. If clothing has come in contact with contagion it should be at once sterilized; simply removing the clothes and hanging them in a closet is not enough; they should have careful attention.

So soon as the physician has taken a bath and thoroughly cleansed his hands and arms by some reliable method, and put on clean clothing, he is ready to take a new case.

In order to sterilize the hands properly, they should have attention at several different times—the permanganate method is as reliable as any. Special care shold be paid to the finger-nails and hair.

EXOSTOSIS MOBILIS OF TIBIA.

BY OTTO SOMMER, M.D., WASHINGTON, D.C.,
Assistant Pathologist, Metropolitan Hospital, N. Y.

IT would be difficult to tell from the accompanying cut that we had anything more than a swelling, somewhat below and laterally from the knee, to deal with.

This was, however, not the case on the living subject,

on whom, when standing, a hard, freely movable body was apparent which had according to location taken its origin from the head of the right tibia near the fibular articulation. It played under the skin as freely as a patella floating in Synovia, as in cases of marked bursitis, although a "bursal condition" did not seem present. I considered it a case of exostosis which had grown pedunculated and broken off (Kraske). The man was an Italian and gave a history of a blow with a hatchet years ago at this point. There was, however, but a suspicion of a scar present, though blunt force could not be excluded as a possible causative factor. For some mysterious reason the patient and relatives declined operation, which would have been but a trifle, and was indicated for cosmetic reasons alone, and the patient is probably still exposed to the annoyance which would result from an impact of this superfluous body with its neighboring parts in case of a severe fall. Matter of taste! One is inclined to view with skepticism the history of a hatchet cut in such cases, for, as I have often heard Kraske say in regard to cancer of the breast, "every woman who has one will 'remember' (?) that she was at one time 'hit on her breast.'" Whether traumatism is an exciting cause of *malignant* neoplasms or not has little bearing here. Ziegler, Vol. II., p. 139, in his discussion of exostosis, osteophytes, enostoses, etc., recognizes the "movable exostosis," and says: "All these neoplasms originate as a sequence to inflammation, they can, however, develop without recognizable further cause." I saw numerous such exostoses with Ziegler at Freiburg and in a similar location, as in my case. The locaton, near the right knee in a right-handed individual, is suspicious in a man using a hatchet, and the frequency in the wood-chopper population of the Black Forrest, also—though, of course, not scientifically conclusive.

Cartilaginous exostoses in the vicinity of joints have occasionally a capsule which in structure coincides with the synovial membranes of the joints, hence—exostosis bursatar—and Bergmann thinks they are developed from the joint-cartilage. Indeed, the mobility in my case was so striking that I laughingly spoke of it to my colleagues as my case of "supernumerary patella."

The question of nomenclature reminds me of a time in Baltimore, when a student, whom I know, asked by a professor of surgery to diagnose a case of "prepatellar brusitis," said: "Well, professor, were it a servant girl I'd call it 'housemaid's knee,' but here I guess it's 'blacksmith's knee.'"

RETROSPECTIVE THERAPEUTICS.

Dandruff.—George T. Jackson (*Jour. Cutan. and Genito-Urinary Diseases*) has had made by his druggist an elegant sulphur ointment which he uses extensively in the treatment of dandruff. Its formula is:

℞ White wax ..... ʒ 3½
Oleum petrolati ..... ʒ 2½
Rose water ..... ʒ 1
Biborate of soda ..... gr. 15
Sulphur, precipitated ..... ʒ 3½

This is an elegant, smooth, white preparation without sulphur odor. It keeps perfectly, does not separate, and is as nearly perfect as an ointment can be. Dr. Jackson has tried on his own scalp all sorts of lotions in the treatment of a seborrheal dermatitis, and invariably comes back to the sulphur cream with pleasure and profit. Used once or twice a week, it keeps the scalp comfortable, does not make the hair too greasy when properly applied, and checks the dandruff.

Carbolic Acid for Burns.—Otto L. Muench (*Med. News*) recommends carbolic acid in the treatment of burns. He has employed it in several cases, in one of which the amount of surface involved was considerable. The application of pure carbolic acid is followed by an immediate cessation of pain and a prompt and rapid healing of the part. The carbolic acid is applied, using the ordinary 95 per cent., and is immediately washed away with alcohol. Not only does it give instant relief from pain, but it effectually antisepticizes the surface of the burn and seals all the avenues of infection.

The Straight-front Corset as a Kidney-support.—Goelet, of this city (*Amer. Surg. and Gynecology*) has discovered that the new "straight-front" corset now so popular with some women is the typical kidney-support long desired for wandering kidney. He claims that it elevates the abdomen, raises the intra-abdominal pressure, does not press directly upon the kidney, and can be applied by the patient after she has learned how. The ordinary well-fitting, straight-front corset may be used, but its proper adjustment is a matter of some skill and must be attended to at first by the physician himself. The patient is taught to replace the kidney while in a recumbent position, and the corset is put on while lying on the back in a position of semi-opisthotonos. The lowest catch is fastened first and the abdomen pushed up as each successsive catch is fastened. Considerable practical experience, he states, has shown that the kidney is held in perfect position and cannot prolapse. The symptoms depending upon its mobility are removed and attacks of renal colic due to congestion or hydronephrosis are prevented entirely. Moreover, the treatment always receives the hearty coöperation of the patient and, he thinks, there is a certain appropriateness in curing the latest fashionable disease by the latest fashion in corsets.

Diagnosis of Diabetes.—Dr. H. S. Stark calls attention to the following signs and symptoms of diabetes mellitus which are not discussed in most of the textbooks: Periodic attacks of headache in obese subjects over thirty-five years of age; extreme and lasting fatigue after short but violent exercise, and prolonged fatigue, say, of one or two days' duration, following slight exercise; slowly failing vision in the aged or quickly failing vision in the young; certain signs referable to the mouth, such as acid saliva, receding gums, fissured and extremely reddened tongue. This is a combination frequently encountered in middle-aged women. Two varieties of symptoms are referable to the heart and its functions—the one set simulating an attack of angina pectoris and a second set presenting the physical signs of arteriosclerosis, or of cardiac hypertrophy. This latter set of cases may be met with not infrequently in obese male subjects with florid countenances and with otherwise healthy appearances. Another train of symptoms is referable to the nervous system. There are present marked nervousness and psychical disturbances; the patient is usually an old man of an ungovernable temper, is easily irritated, and, be-

sides, is impatient, has a morose expression and lacks cheerfulness. Still other symptoms which should put the clinician on his guard are premature grayness, premature sexual weakness, diminished patellar reflex, slow healing of wounds, cramps in the calves of the legs in the morning hours, accompanied by muscular weariness.

Picric Acid in the Treatment of Gonorrhea.—H. de Brun (*Rev. Gén. de Clinique et de Thérapeutique*, June 15, 1901; *Ann. de Dermatologie et de Syphilographie*, Sept., 1901) says that injections of a 1 in 200 solution of picric acid are often painless, while those of 1 in 100 may cause considerable pain, but are never intolerable. Given with a compressed meatus and so retained for three minutes, and repeated from two to three times daily if they cause little pain, or once daily if they are borne with difficulty, they are said to produce a radical cure of acute gonorrhea in from four to five days; from the first injection the discharge becomes clearer and loses its purulence; it sometimes becomes more abundant, but diminishes and disappears when the injections have been suspended. In chronic gonorrheas that resisted all previous treatment, rapid and final cures have been obtained.

Local Anesthesia without Risk of Danger.—Rasely (*Intern. Jour. of Surgery*, April, 1901) has found chloretone equally as good as cocaine in operative cases, including the incision of abscesses, amputation of fingers, and even in the extraction of teeth, without the least evidence of a depressing effect.

He has operated on a case of complete fistula in a man seventy-four years of age, with fatty degeneration of the heart, using chloretone as the anesthetic for several reasons. No pain was felt, and there was not the slightest manifestation of depression or exhilaration, although syringeful after syringeful of the saturated solution was used in the line of the proposed incision.

Rasely thinks chloretone an ideal local anesthetic, and he believes it to be sure in effect and safe in result. He thinks it is well adapted to take the place of cocaine in subarachnoid anesthesia.

Oxygen for Boils and Carbuncles.—Dr. Thiriar, Professor of Clinical Surgery at the University of Brussels, has been trying a new treatment of boils and carbuncles by the use of oxygen. The apparatus used consists in a receptacle containing the gas at a pressure of several atmospheres, a rubber tube, and a Pravaz needle; the latter is inserted into the boil, but before doing so it is well to try the apparatus, so as to regulate the quantity of oxygen which escapes. Only one injection into the base of the tumor is found necessary in the treatment of boils. If it has already maturated, oxygen should be injected into the core. With a carbuncle four to six injections should be made around the tumor, and also through the openings of the core. According to Dr. Thiriar it is surprising how quickly a change takes place; the pain diminishes very rapidly, and the next day there is a noticeable change in the condition of the boil. In a few days cicatrization takes place.

A Differentiating Sign in Infantile Pneumonia.—Weill claims that pneumonia in young children can be diagnosticated from other diseases by the following sign, which he considers pathognomonic: This sign is the lack of expansion in the subclavicular region, independent of the site of the pneumonic lesion. With the child on its back, the chest exposed, and respiration regular, it is easy to note the difference in expansion between the two sides. On placing the fingers on the subclavicular region on either side, they are lifted as by a wave on the sound side, while on the other the lack of expansion is evident, even in the very first days of the disease. In pleurisy or pneumothorax, the lack of expansion corresponds to the seat of the lesion, but in pneumonia it is invariably subclavicular.

Nephritic Urine.—In order to detect faint traces of albumin in nephritic urine, Praum (*D. med. Woch.*) adopts the following method: A few centimeters of the urine are filtered into a test tube and a few drops of the reagent (sulfosalicylic acid in concentrated solution) added. The whole is then carefully mixed and after some time a few more centimeters of the filtered urine are allowed to trickle slowly down the side of the tube. The result is a layer of clear control urine above the faintly opaque test urine, forming a contrast capable of revealing extremely minute quantities of albumin.

Treatment of Inoperable Cancer.—A. Cooper (*Lancet*, Oct. 12, 1901; *Med. Age*) draws the following conclusions:

1. That in cases of inoperable sarcoma, more especially the spindle-cell variety, the patient should have the option of Coley's fluid given to him, since a certain number of cases have been cured.

2. That in cases of inoperable cancer of the breast in women of about forty years of age in whom the menopause has not occurred the operation of oophorectomy should be proposed, and this treatment may be combined with thyroid feeding.

3. That in cases of inoperable rodent ulcer and in the superficial malignant ulceration in other parts the Roentgen rays give a good hope of improvement.

4. That in cases where these other methods are declined or are inapplicable the internal administration of celandine is worthy of trial, and when the case appears quite hopeless morphine should be pushed without hesitation.

5. Finally, that before trying any of these remedies the risk should be fully pointed out to the patient, that the faint hope that most of them afford should not be magnified, and that the discomfort of treatment should be fully discussed; in fact, the surgeon should not do more than offer the treatment and leave the person to accept or reject it.

RETROSPECTIVE DIETETICS.

Alcohol and Its Medical and Scientific Aspects.—Woodhead states, in an article on this never exhausted subject, which he published in the *Edinburgh Medical Journal* for August, 1901, that his views may be summed up as follows:

Alcohol is a narcotic poison, of which the pernicious effects are to be seen at all times, and on every hand. It is a drug which, under certain conditions, may be valuable, but it is a dangerous medicament in the hands of any one but a physician, and even in the hands of the physician or surgeon its exhibition is attended with dangers that attach to the prescription of no other substance in the pharmacopœia. These dangers are not moral only, but physical dangers, resulting from the action of alcohol on the tissues generally, but especially on those of the nerve centers. Its food value under ordinary conditions is practically *nil*, and, put in the most advantageous light, can only be temporary, and then of an extraordinarily slight and wasteful character.

Macaroni as an Article of Diet.—With the Italians this valuable food product is a national dish. So far as it has been adopted in foreign countries, and particularly in America, it seems to have met with marked favor, being a digestible and palatable food. The origin of macaroni is uncertain, but it is probable that

the preparation was the outgrowth of the peculiar varieties of wheat which are raised in Italy and the northern parts of Africa. The grains of the cereal, as grown there, contain a much larger quantity of gluten and other nitrogenous components, and it is called by the Italians *grano duro*. The terms macaroni and vermicelli are applied to pastes made with flour obtained from this hard wheat, and which is pressed into hollow cylinders.

Heretofore it has been believed that American wheat did not lend itself to the manufacture of macaroni, but this has been experimentally shown to be false by the fact that at Castellamare macaroni of excellent quality has been made from American wheat. All that was needed was to have the wheat fully ripe before it was gathered. It is uncertain whether the wheat of the northern portions of the United States will ripen sufficiently in the short seasons to produce the large quantity of gluten in the kernel characteristic of the thoroughly ripened grain; but the central and southern portions of the United States should produce a wheat in every respect similar to the hard wheat of Africa and southern Italy.

Heretofore the cost of macaroni and similar products has precluded its extensive use among people of moderate circumstances, but an abundant and cheap supply of these products will undoubtedly lead to their more extended use. As a substitute for starchy foods they are invaluable, and probably they do not contain more starch than many of the so-called gluten foods which are put up for the consumption of diabetics. They afford a most valuable supply of vegetable nitrogen, and, as remarked by a contemporary, "we are surprised that in the frantic efforts of the vegetarians to substitute vegetable for animal nitrogen, attention has not been more strongly directed to this substance."

A New Fruit.—There is every reason to suppose that before long a most delicious fruit, new to America, will dominate our markets; already a few specimens have found their way to the seaboard cities, says the *Southern Clinic*. This is the mangosteen—native to the Moluccas and extensively cultivated in Ceylon and Java, and latterly introduced in Jamaica and other parts of the British West Indies. It is about the size of a small orange, spherical in form, and when the rind is removed a juicy pulp, "white and soluble as snow," is revealed, possessing a most delicious flavor—something like a nectarine, with a dash of strawberry and pineapple combined. It promises, in a few years, to supersede the orange in popular favor, and attempts are already being made to introduce it into the southern United States.

Potatoes and Diabetes.—Some time since it was announced that a diet of potatoes was favorable to the course of diabetes, producing a marked amelioration in the glycosuria, diuresis and thirst, combined with a marked improvement in the patient's general condition. This view was first advanced by A. Mosse as the result of extensive observations. This investigator now reports (*Jour. Phys. et Path. Générale*, Sept. 15, 1901) the detailed study of two cases which confirms his opinion of the benefit to be derived from this diet. He submitted the urine and feces of these patients to extended examinations. He shows that the benefit in these cases is to be ascribed neither to defective absorption nor insufficient transformation of the carbohydrates present in the potatoes, the amount of such material voided by the intestine not being materially altered. He believes that the large amount of water introduced into the system on such a diet is an important factor. Furthermore, that the hydrocarbons of potatoes are more utilizable by diabetics than has been hitherto supposed. This subject is of importance from both biological and clinical standpoints and is worthy of more extended investigation.

An Ideal Food for the Vegetarian.—According to a note in the *Montreal Pharmaceutical Journal* for July, 1901 (*Medicine*), a curious plant was recently described by M. Balland before the French Academy of Science. It is termed "voandzou," and is believed to be the only plant which is known to possess in due proportions all the elements that are required for the nourishment of man. It is a native of tropical Africa and is largely cultivated by the negroes. In southern Asia it is common, but it does not grow in America, excepting in Brazil, where it is known under the name of "Mandubide Angola." Its nutritive portion consists of large masses enclosed in large pods like beans. When raw it tastes like ordinary bean, but when cooked has the flavor of chestnuts. They contain about 10 per cent. of water, 19 per cent. of nitrogenous matter, 6 per cent. of fats, and 5 per cent. of starch with 4 per cent. cellulose. The conclusion of Balland was that immediate steps should be taken to cultivate this plant wherever it can be grown. It is not believed that it can be successfully cultivated in Europe, but it is thought that it will prove an admirable food supply.

The new food may contain a much larger proportion of nitrogen than any other now available in the vegetable kingdom, but it will have to be shown in the new product that the nitrogen is in an assimilable form. Substances which contain large quantities of nitrogen derived from the vegetable kingdom are commonly difficult of digestion.

Beef Tea in Typhoid.—The physician with abundant clinical experience in typhoid will, we think, agree with the view that the too early stuffing of the typhoid patient, either with milk or other food, is an unwise proceeding, says the editor of *Medicine*. There is certain experimental evidence that goes to show that infections in animals are best tolerated upon a restricted diet. . . . The same lesson is taught in the loss of appetite which attends the onset of most of the acute infections; this indication should be thoroughly respected. The favor with which beef tea, made in the old-fashioned way, has been looked upon by the laity is doubtless due to the fact that it contains practically no nourishment and is no tax upon the digestive organs. . . . We believe that it is one of the best articles of diet in the early days of the typhoid, especially when made so as to be almost devoid of food value. Administered hot, it is gently stimulating and encourages both the patients and the friends with the idea that nourishment is being taken. It overcomes also that sense of oppression which follows the entire withdrawal of food for a number of days.

Simple Method of Forcible Feeding.—Dr. I. S. Ivanoff, of Kostroma, recommends the following method for forcible feeding, which he has successfully employed in the case of an insane lady who absolutely refused to take food, in consequence of having some fixed idea on that point. Having seated and steadied the patient, he firmly closes her nostrils by pressure, which causes her to open the mouth for breathing; then he slightly bends the lady's head backward and pours some liquid food into her mouth, by means of an ordinary spoon; she appears to swallow without much struggle. The method is said to be very simple, and by far less troublesome and more convenient than the ordinary introduction of a gastric sound through the nose.

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NATURE arms each man with some faculty which enables him to do easily some feat impossible to any other.—EMERSON.

THE SEASON'S VICISSITUDES.

THE present winter has been an exceptionally hard one, upon those who for any reason have found themselves below par. The extreme, steady cold, while exhilarating to the strong and healthy, has been exceedingly depressing upon the weak and debilitated. It has been weather in which to beware of pneumonia, and while we have not experienced so much of it in this quarter, what we have had has been sharp, active, and severe, terminating quickly, one way or the other. There has been an unusual number who have just escaped through prompt nursing in time, which is most important.

It is difficult to make people appreciate the care necessary to avoid the effects of a severe chilling of the body under any circumstances, but particularly so on clear cold days, when there is danger lurking in every breath. It is so easy to contract a pneumonia from undue exposure of the upper part of the body. Cases in illustration of this statement may be found just now in that most healthful old New England town, where the President's son, with others, contracted pneumonia, it is said, from exercising bare-headed, and otherwise exposing themselves to the icy winds of this trying climate.

If it were the custom to never wear head-covering, there would not be the danger that there is when the bare-headed practice is an unusual or exceptional thing. It is a dangerous practice, also, not to protect the neck and chest against chilling draughts, neglecting or overlooking Nature's warnings. While the skin should be protected from exposure, it is not wise to produce perspiration, from which there is sure to be increased susceptibility to cold.

It is because woolen garments next to the skin produce perspiration, and hence greater liability to cold, that physicians so largely advise the wearing of the linen-mesh goods, which have been found so preferable in every way. Our experience is that those who wear these garments not only do not feel the cold, but are much less susceptible to its effects. If any one doubts this statement, it can easily be decided by making the trial. Suitable protection of the skin, therefore, is an important element in the protection from the vicissitudes of the season, which the physician should not overlook.

That an ordinary, uncomplicated case of pneumonia recovers, under good nursing, in a definite period, all will admit, providing the victim is of favorable age and has the necessary staying qualities to enable him to stem the crisis which is sure to follow. It is the cases which occur in the debilitated, the aged, and those accompanied with complications, which try the physician's skill and patience.

While pneumonia is generally admitted to be a contagious disease, and dependent upon some micro-organism, it must have a soil favorable to its development. In some cases the anti-pneumococcus serum has shown glowing results, and failed in others, showing the necessity for individual treatment. There is hope, however, in the future for this method. In the line of drugs, carbonate of creosote or carbonate of guaiacol, have shown wonderful results, there being on record positive proof of the specific action of these drugs in aborting the disease when given early, modifying it at any stage, and promoting a favorable termination in many.

While it is not the chilling of the body *per se* which is the cause of pneumonia, as formerly supposed, it is the result of this process in many cases which admits of the implantation of the micro-organism to which it is immediately due.

As physicians we cannot too strenuously guard our confiding patients against a sudden chill at any season.

The prostration which follows grippe and tonsillitis has been very protracted this year, although the former has not prevailed to a great extent, nor has it been as severe as in some seasons. Thus far rheumatic affections have not been much in evidence, but as the season advances with increasing dampness we shall naturally see more such cases.

The province of the true family physician is never greater than when his prophylaxis has saved those under his professional care from dreaded disease.

Then it is that his services should be appreciated, and we think generally are, particularly if the patient realizes the danger to which he has been subjected.

To escape pneumonia is an event for which any one should be thankful, and the physician who can help in the undertaking is to be congratulated.

The preventive methods which may be employed in the class of affections to which we have referred, will be dictated by ordinary prudence. Susceptible individuals should be kept indoors in inclement weather and should be urged to omit imprudent acts.

The rooms of living apartments should not be allowed to reach too high a heat, but should be kept uniform, at

an agreeable temperature, with the avoidance of draughts. It is the sudden change which often results in sad consequences.

It is the physician who should point out and enforce these precautions, for, as a rule, no others will understand their importance, or appreciate such necessity. The aim of this article is to impress upon the practitioner the importance of guarding against some of the ills to which his patients are subject at this season of the year.

TUBERCULOSIS HOSPITAL.

IN the February number of the TIMES the attention of the profession was earnestly called to a new tuberculosis hospital, in which the patients were placed and treated separately from the other members of the great institutions. A large number of the inmates of the old Insane Asylum, on Blackwell's Island, were removed to Ward's Island Hospital, which was erected for an Inebriate Asylum, and its patients were transferred to a general hospital on Blackwell's Island, which received the name of the Metropolitan Hospital. Some of the buildings were not fully occupied, and the commissioner proposes to fill the vacant ones with tuberculous patients, under the care of the Medical Board of the Metropolitan Hospital, of which these pavilions will form a part. This step has been so warmly approved, on account of economy and efficiency, that the commissioner has already opened the first pavilion, containing 121 beds. These are all filled with tuberculous cases, which are receiving watchful and efficient care.

It is understood that the commissioner will ask the Board of Apportionment for an appropriation to put in proper order the buildings known as the Retreat and the Amusement Hall for the use of tuberculous patients, affording accommodations for about 450. It is also proposed to erect a pavilion for open-air treatment. Although the tuberculous patients have been removed from Bellevue and the city hospitals, there are still about 60 in the Metropolitan and 120 in the Almshouse. When the repairs and alterations of the buildings in question are completed, ample accommodation will thus be provided for the care of tuberculous patients of the city's poor, together with room for the proper segregation of the different stages of the disease.

The commissioner proposes to furnish the means necessary to carry out modern methods of treatment, and it is expected that a complete institution, with all the best appliances, will be in working order before the end of the year.

At present, the commissioner has afforded every facility possible in the newly-opened building, and, although working under some temporary disadvantages, good results have already been accomplished in cases in the earlier stages of the disease. We look forward to the time when the statistics of the Tuberculous Division of the Metropolitan Hospital will show interesting and satisfactory results. No other place in the city limits affords such opportunities for the care of this class of patients as Blackwell's Island.

HEREDITY OF TUBERCULOSIS.

TO say that a disease or a tendency is inherited is satisfying and it waives responsibility. That human characteristics, mental and physical, are hereditary is beyond question, but, aside from the gradual development of racial types, we believe that the power of heredity, especially in the production of disease, has been greatly exaggerated. First of all, we must distinguish quite sharply between heredity from parents and that which we imagine and which is most interestingly portrayed in some novels, as passing down a long chain of ancestors. This latter kind of heredity is limited to the common characteristics of a whole race or the local beginnings of a race and cannot possibly occur in a family, except by a continued custom of inbreeding, approaching incest and either threatening the existence of the family or else making that family virtually a race by itself. That consanguineous marriages tend to destroy a family is quite well established, though the occasional intermarriage of first cousins of good health need not be disastrous. We know of no instance in which a single pair of parents has produced a long lived family without the admixture of foreign blood, at least at occasional intervals. We can recall no instance of modern times which approaches so nearly the formation of a race by close inbreeding of a few lines as is illustrated by the Pitcairn Islanders. These started in 1790 with a maximum of 27 ancestors—nine British sailors, 6 Tahitan men and 12 Tahitan women. Within ten years, however, all but one of the British men had died, as well as several of the Tahitans. In 1859, the total population resulting from these ancestors, who had recently been removed in a body to Norfolk Island, numbered 219. Two families then returned to Pitcairn Island numbering seventeen. In 1877 these seventeen had increased to ninety, in part through the addition of some of their relatives from Norfolk Island. In 1884 the population was 130. It would be most interesting to trace the network of heredity in these little communities, to the beginning, not more than four or five generations back, in some dozen or twenty ancestors. This people, though mild and religious, is not described as favorable to the results of inbreeding.

When we speak of heredity for, let us say, five generations, in a family, we must understand the equal or approximately equal blending of the traits and tendencies of sixteen different ancestors and we must accept as a corollary the same liability to the inheritance from any particular ancestor, on the part of every other descendant of the same generation. As we increase the number of generations, the number of ancestors increases geometrically by two, barring elimination of ancestors by consanguineous marriages. To say that the Jones family in general has any special heredity is absurd, for heredity is no respecter of our custom of

handing down surnames. In fact, there is some reason to believe that a boy inherits more from his mother and a girl more from her father than otherwise. But it is just as impossible to find a family in the suppositious sense of a continuous entity, with prevailing characteristics for a number of generations, as to suppose that a river formed by the regular joining of pairs of confluents can retain the characteristics of any particular creek which gives its name to the augmenting waters.

If, however, we limit the term heredity to the result, in the children, of physical and mental characteristics of the parents or possibly grandparents, there is no *a priori* reason why a tendency to health or disease may not exist. Nevertheless, the term *hereditary tuberculosis* should be used with caution. The very frequency of the disease—involving fatally at least a seventh and possibly as many as a quarter of the human race—is opposed to the conception of heredity. Again, if genuinely hereditary, we should expect it to exhaust its own soil. A disease not essentially fatal, or occurring late in life and not interfering with the process of reproduction, may be expected to persist as a marked hereditary tendency, but to consider as essentially hereditary a disease of youth and early adult life, is the next thing to advocating hereditary sterility. While the prenatal development of a disease is, in the strictest sense, hereditary, it is not so in the practical sanitary sense. We need not delay long over this point in regard to tuberculosis, however, as very few such cases have been reported—only three, on unquestionable authority, and in unmistakable form, if we are rightly informed. When we consider the matter of inheritance of a tubercular tendency by the children of one or both tubercular parents, the existence of such a tendency seems at first thought amply proved. But, would the manifold observations of family tuberculosis be considered valid in establishing the inheritance of a tendency to any other bacterial disease? In the case of acute bacterial diseases, contagion or infection from a fomes would be the only tenable theory. Of chronic germ diseases, we can draw no close comparison with any which would be just to either side of the argument, but it ought to be obvious that heredity cannot be established as an etiologic factor so long as infection occurs in the presence of an actual case of the disease under the same roof or so long as the reasonable possibility of infection from fomites—that is from walls and floor, carpets, bedding, etc.—can not be excluded. In this connection some investigations of Harold Coates of Manchester, England, reported in the *Med. Press and Circular* of August 7, 1901, are of interest. He finds that dirty houses with a careless consumptive yield infectious dust in two-thirds of cases; clean houses with a careless patient in half of all cases; while dirty houses not occupied by tuberculous patients, at least not for several years and therefore exposed to infection only through the ordinary atmospheric causes, never yielded tubercular dust. The word *dirty* is used in the domestic sense. In all cases dust was collected so as to represent the sediment from the air of the room, not direct deposition of sputum.

In other words, to establish a distinct hereditary tendency to tuberculosis, we must first accumulate a considerable series of instances in which the children of tubercular parents, removed from contact with the parents and from tubercular fomites, have shown a marked liability to contract the disease, from the ordinary accidental encounter with bacilli, to which all are liable, and after the expiration of a reasonable time allowed as an incubation period. It ought to be easy to determine this point from the statistics of orphan asylums.

As to the so-called tubercular diathesis, its clinical description is simply the description of a cachexia, with anemia, insufficient chest development and a poor circulation. Even so, we have frequently encountered cases which have resisted tuberculosis for years with or without the relief of the indications of the "tubercular diathesis." As to mere blondness with slender type of trunk and limbs on the one hand or coarse, dark hair with stubby form of the body tending to tuberculosis, there is absolutely no clinical proof. If there is any complexional indication of tubercular predisposition, it is neither the blond nor brunet type but what may be called a mud-colored tint of skin and hair, but this simply means a sluggish state of nutrition and elimination.

It is unquestionably true that the children of tubercular parents or of parents who subsequently become victims to this disease, are not of the average stamina of those born of healthy parents. To this extent, there is a tubercular tendency or rather there is a tendency to all diseases in the etiology of which general health is a factor. But it is a great error to assume that such children are doomed to tuberculosis and the error becomes of enormous danger when it is allowed to be an excuse for relaxing precautions against tubercular infection or hygienic means to secure ample respiratory function and good general health.

THE X-RAY IN THE TREATMENT OF CANCER.

AN article by Dr. William Allen Pusey, in the *Journal of the American Medical Association* for January, gives an account of three cases of undoubted sarcoma treated by him with the X-ray. In one of these, under X-ray exposures, "with absolute absence of other treatment," the sarcoma disappeared, and after three months without treatment has shown no evidence of recurrence. In the other two cases (both inoperable) the effect on the tumor was negative, although considerable relief from pain seems to have been obtained. The writer thinks that in the first case the definite curative effect of the X-rays on a sarcoma is conclusively demonstrated, and—taking it in conjunction with several authentic reports in the literature, in which the results were favorable, though less complete—he believes it may be maintained that in cases of sarcoma which

cannot be treated successfully by surgical means, the effect of X-rays should be tried; and, further, in cases of sarcoma which have been treated surgically, subsequent use of X-ray exposures as a prophylactic is a procedure which should be considered.

The above results having been observed by Dr. Charles Warrene Allen, of this city; he was led to adopt the X-ray treatment in his own cases, but not exclusively, as he considers it acts best as an after-cure and prophylactic measure. He has thus far treated six cases of epithelioma—one upon the chin, two upon the nose, one upon the finger, one upon the forehead, and one upon the cheek. Four were recurrent cases and one primary. One disappeared from observation; the others have done well, and might be considered cured, but all are still taking ray treatment. Besides these cases, he has observed a number of others. He has seen several times in consultation, a gentleman with an extensive recurrence, in whose case the X-ray has been practically the only form of treatment applied. This extensive growth has decreased nearly one-half in size, and the general condition has improved. In an old gentleman with an epithelioma of the nose of many years' standing, which now appears to be cured, the ulceration has healed, and the whole surface is desquamating in a manner not before seen after other treatment.

Dr. Allen favors the parasitic theory of cancer, in which disease new territory is invaded and involved much in the same manner as in diseases of known parasitic origin, good results being likewise obtained in the latter by the X-ray.

The belief held by some that it is necessary to produce a so-called burn, he pronounces erroneous.

As to the dangers from X-ray treatment, he believes them to have been overestimated, and that the cases of injury by this method are growing fewer in spite of its much more extensive use.

CULEX VERSUS FOMITES.

THE surprising hypothesis announced last February, at the Pan-American Medical Congress in Havana, that yellow fever is solely transmitted by mosquitoes of the variety known as Culex fasciatus, has been quite generally accepted, we believe, by the profession in this country. The high authority of Surgeon-General Sternberg, and the apparently conclusive results of the experimental tests instituted under his supervision, seemed almost to compel acquiescence. But Dr. Sternberg has further declared that, as a logical consequence of this theory, all those preventive measures which have hitherto been considered most important, *i.e.*, isolation of the sick, disinfection of clothing and bedding, and municipal sanitation, are either of no avail or of comparatively little value, and, must, therefore, be abandoned. This pronouncement has stirred up a very decided and outspoken spirit of opposition, which, so far, has been manifested chiefly, if not entirely, by Southern writers on the subject. Thus, in the January number of the *Texas Medical Journal*, Dr. J. P. Oliver endeavors to show that the record of yellow fever, "from its earliest recognition to the latest epidemic in the United States," nowhere sustains the "scientific theory" in question, and winds up his elaborate argument by threatening a return to "shot-gun methods," if an efficient quarantine system is ever relinquished in deference thereto. In this position he is more than fully sustained by Editor Daniel. "The evidence," says the latter, "that yellow fever is disseminated by fomites, and by atmospheric infection, is overwhelming," and he refuses even to concede that the experiments of Drs. Reed, Carroll and Agramonte have demonstrated that the mosquito is a factor in propagating the disease. Dr. Oliver does not go so far as this, but he thinks that the experts of the Cuban Committee "prove too much," since they show that the houses (of the experimenters) were built under good sanitary conditions; that the investigation was made at the season of the year most favorable to non-development of the disease; and that so long a period as twelve days was required to determine infection by the insect. A number of alleged incidents during yellow fever epidemics in the United States are cited in support of these contentions, and the opinions of several southern army-surgeons, health officers and practitioners are marshalled on the same side. Among these authorities is Dr. John H. Purnell, who had charge of two yellow fever hospitals in Mississippi, and, from his own experience, is "forced to the conclusion that the mosquito has been and will continue to be, but a limited factor in the spread of yellow fever," and has "no hesitation in predicting that further observation and study will convince the profession that fomites cannot be ignored."

From all this it will be seen that the issue is now fairly joined between, let us say, Sternberg and the culex on one side, and Oliver and fomites on the other. It can be finally decided only by the preponderance of unquestionable facts, for the accumulation of which, time, of course, will be required. Even at this stage of the inquiry, however, we venture to submit the following official statement, as evidence outweighing—so it seems to us—almost any number of "striking" anecdotes gathered at random from irresponsible parties in panicky seasons and obscure neighborhoods. We quote from *American Medicine*. Italics are ours:

Yellow Fever Suppressed.—Surgeon-General Sternberg has received a report from Major W. C. Gorgas, chief sanitary officer of Havana, showing a great improvement in the sanitary condition of that city. There has not been a single case of yellow fever in the city during the month of October, usually the severest month for that disease. During the past ten years the average number of deaths during the month of October from yellow fever was 66.27. In October, 1896, there were 240 deaths and 25 in 1899, the lowest previous rate in the past decade. In October, 1900, there were 308 cases and 74 deaths. This year there were no cases and no deaths. This result is undoubtedly due to disinfection on the lines commenced in February by the Military Governor to kill infected mosquitoes. It has only oc-

curred a few times since yellow fever became epidemic in Havana, about a century and a half ago, that an October day has passed without a death from yellow fever. *The present condition cannot be due to chance and cannot be entirely due to the general sanitary improvement.* The only change from last year is that since February all infected mosquitoes have carefully been killed. In Havana they have worked on the hypothesis that the mosquito is the only way of transmitting the disease. *They have not considered fomites in any way.* Clothing has not been disinfected nor any effort made except to kill the mosquitoes which had bitten a sick person, and to prevent any more mosquitoes from biting after the case was discovered.

CONSERVATIVE OVARIAN SURGERY.

SURGICAL treatment of the diseased ovaries of women, with a view to complete and enduring recovery of their lost function, appears to date from the year 1887, when experimental work in this line was begun by Dr. A. Palmer Dudley. The claim he now advances that this work is no longer experimental, is fully sustained by his very interesting account of his cases and of their after-history, given in a paper read last summer before the American Medical Association and reprinted from its Transactions. The whole number of these cases is 190, and among them there is *not a single failure.* "Included in this number are cases in which the ovary has been completely buried in plastic exudate, in which the tube involved in the same has been completely occluded in its outer half; where the uterus has been displaced and firmly bound in such displacement; in fact, where every organ and function in the genital system of these women have been pathologic." In many of the cases multiple operations other than those upon the ovaries were necessarily performed at the same time. Out of those cases which the author was able to keep trace of—148 in number—137 are reported as cured and 11 as improved. From this 148 he is able to report 23 cases of pregnancy with delivery at full term, and 5 cases of miscarriage; in all, 28 pregnancies; an average of about one in every five and one-half cases.

As regards the mode of operation, the sole object of the work being to preserve the ovarian influence and the function of menstruation, the ovary is divided lengthwise rather than crosswise, so that the circulatory and nervous supply shall not be cut off. Similarly, in operating for the removal of cysts of considerable size, the ovary is fairly split in two, down to the hylum, but care is taken not to sever the ovarian artery and nerve. Very fine silk suture is used, of which several rows are placed through and through an ovary, always using a cambric needle. Catgut Dr. Dudley never uses in the ovary. He disapproves of the thermo- or galvano-cautery in the treatment of cystic degeneration. He has yet to see the first case of suppuration of the ovary following such work as he recommends. In one of his cases (noted in the reprints) the woman, after undergoing a second abdominal section, gave birth to a full-term healthy child. On the whole, sufficient evidence, he thinks, has been gathered to show that the ovary, or healthy portions of it allowed to remain, "if given half a chance," will perform its function in a satisfactory manner. Farther than this, he is thoroughly convinced that ovarian tissue is capable even of change of habitation and still will not shrink from doing its duty. In carrying out his process of ovarian grafting—the result of this conviction—the author prefers the intrauterine implantation of the ovaries, first performed by him on May 24, 1899. Since that time he has the record of five successful cases, all of which are now menstruating. Attention is called, in this connection, to a change in his method of procedure. Instead of severing the ovarian tissue completely from its ligamentous attachment, and planting it in the centre of the fundus, after removal of the fallopian tube, he splits the horn of the uterus and implants the ovarian structure, reduced in size to suit the occasion, but still attached to its own ligament. By this method the ovarian tissue is nourished by its own circulation until such time as collateral circulation shall give it a better supply. Moreover, the proper nervous supply to the ovary is not cut off and should the ovarian tissue subsequently give trouble it is within the cavity of the uterus, where it can be quickly reached with a sharp curette and removed without danger to the patient.

MEDICAL UNION.

MEDICAL UNION was recently exemplified in a joint meeting of all schools of medicine in Clark County at Springfield, Ohio. The occasion was a reception to Prof. D. N. Kinsman, Chancellor of the University at Columbus.

The meeting is reported by one of the minority who was there, as being "a perfect success, and it was unanimously concluded that all sectarian names be dropped, and we have a universal school of medicine."

If the minority can retain their position long enough to get used to their good resolutions, and the majority continue to show the brotherly spirit they profess, true unity can be accomplished by this movement, but there must be mutual respect and good-fellowship with honor, or the whole thing will result in a farce.

Prof. Kinsman made a strong plea for professional unity in his after-dinner speech, as reported in the local press. We would suggest to those interested, that more depends upon the treatment of each other personally than upon any other point. On the one hand, while the sectarians should faithfully drop their designations, the non-sectarians also have a duty to perform in order to make the relations cordial and permanent.

A little more work along these lines will bring about a union of the profession, which will be of splendid effect upon all concerned.

THE new Lying-in Hospital built through the munificence of Mr. J. P. Morgan, was recently opened to the public, and is a most complete embodiment of the perfect modern hospital. It is absolutely fireproof and splendidly situated.

A SUMMER SCHOOL.

A SUMMER school of Chemistry and Biology will be organized at Wesleyan University in July, 1902, and will be open for a period of four weeks. The school is started in response to a demand for instruction in certain branches of applied chemistry and biology. The work of the school will be in charge of Professors W. O. Atwater, W. P. Bradley and H. W. Conn, aided by a number of assistants.

The courses offered are intended for teachers of home science, who desire to become more familiar with processes used in food analysis, dietary, digestion and metabolism experiments, and bacteriological inquiry in their relation to energy and health; for social workers who, by further study of dietetic and hygienic problems, may be able to do more effective work among the destitute and ignorant of our population; for teachers of chemical, physical and biological science who desire to enhance the interest and educational value of their instruction by the use of illustrations from applied science; in general, for those who wish to familiarize themselves with some of the latest methods and results of inquiry in the special lines referred to.

The courses offered include the following: A course of lectures on methods and results of investigations regarding food and nutrition; a short course in food analysis in the chemical laboratory; a practical course in methods of dietary studies; a short course in either qualitative or quantitative analysis, or in special lecture experiments; a special course in the new cryogenic laboratory on chemical phenomena at low temperatures; lectures on bacteria; a laboratory course in bacteriology.

This is an important opportunity and should not be missed by any one interested in these studies.

IT is authoritatively reported that the trustees of the Woman's Hospital, which has occupied for years the block bounded by Lexington and Park avenues, Forty-ninth and Fiftieth streets, have purchased the place for a new home for the institution. The new site comprises a tract of twelve lots on One Hundred and Ninth street and twelve lots on the Parkway, on One Hundred and Tenth street, between Amsterdam and Columbus avenues, immediately adjoining the site for the Academy of Design. The area of this plot, which is about sixty thousand square feet, affords room for a splendid building, with plenty of light and air. As the old hospital and ground were sold for $450,000 and the new site costs approximately $250,000 only, a substantial margin for building purposes will be at the disposal of the trustees. The main building of the hospital is to be six stories high, and building operations will begin without much delay.

WE are gratified to see the agitation now going on in the daily press in behalf of a private hospital for smallpox patients. Medical men are a unit in declaring that New York is in need of a hospital of this kind, and those who know the conditions prevailing at North Brother Island concur in urging the erection of such institution. It seems odd that while all specialties of patients are provided for, those afflicted with smallpox should be entirely neglected. And yet, according to Dr. Louis Fischer, it looks as though there might be an epidemic of smallpox in our city in the spring or possibly in the summer, and in such event even the isolation hospital of our Health Department might prove inadequate for the great demand. There should be another hospital besides the one at North Brother Island, a large model institution of its kind, provided with all sanitary means and appliances so as to allow study of the disease, and with special buildings for the observation of suspects, so as not to necessitate the placing of doubtful cases immediately in sick wards. Here individual philanthropy is indeed offered an opportunity to confer a great boon on the metropolis.

IT seems to be the general opinion that the office of coroner is a thing of the past, and should be abolished. This is not a new suggestion, as it has been repeatedly made for many years, and the new charter should not have provided for its perpetuation. In a city like this there is sufficient machinery without the coroner's office to deal with cases of sudden death. The Health Board, the District Attorney with his grand jury, and the various courts, can do this work to much better advantage, and with less complication. It is not even best to inaugurate the Massachusetts plan of a medical examiner for this city, as there is a simpler and less expensive way open to us, through means already existing. The Legislature should be earnestly petitioned to grant the desired change.

HARVARD MEDICAL SCHOOL, in addition to the three buildings to be erected by Mr. J. P. Morgan for its use, is promised a million dollars by Mr. J. D. Rockefeller, providing half a million is raised in some other way.

It is stated that there is little doubt that this condition will be speedily complied with, and that this magnificent plan for the advancement of medicine and the allied sciences will soon become an accomplished fact. Since the announcement was made that Mr. Morgan had agreed to erect three of the buildings, the plans of the architects called for two additional laboratory buildings, and a considerable fund was also needed to provide for the increased running expenses of this greatly enlarged educational plant. The university is to be congratulated upon its good fortune, and as it "never rains but it pours," from another source $50,000 is given for the prosecution of research in chronic diseases.

THE Grout Bill, in behalf of honest butter, will probably pass the Congress at the present session. It does not interfere with the manufacture and sale of oleomargarine, but this law is intended to prevent oleomargarine being fraudulently sold as butter. The measure as presented should receive the unanimous support of the country, as it is in the interest of health and of honesty.

BIBLIOGRAPHICAL.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Comprising ten volumes on the Year's Progress in Medicine and Surgery, issued monthly. Volume I., General Medicine, edited by Frank Billings, M.S., M.D., Dean of the Faculty of Rush Medical College, Chicago. Volume III., The Eye, Ear, Nose and Throat, edited by Drs. Casey A. Wood, Albert H. Andrews, and T. M. Hardie.

We have already favorably noticed this series of year books, which we may say are in some respects ideal. The subjects treated are by master hands, are thoroughly digested, and are eminently practical. Dr. Billings has written an introductory to each subject, which not only makes the text more readable but admits of a better understanding of what follows. We are glad to see that the series meets a popular demand and at a low price.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles in the Various Departments of Medicine by Leading Members of the Medical Profession throughout the World. Edited by Henry W. Cattell. A.M., M.D., with many collaborators and regular correspondents in Montreal, London, Paris, Leipsic and Vienna. Volume IV., eleventh series, 1902, pp. 302. Philadelphia: J. B. Lippincott Company, 1902.

These volumes give the latest word upon the subjects of which they treat. In our last issue we reviewed editorially two important articles contained in the book under consideration, *viz.*, "Latest Views on Strychnine" and "Solutions of Mercurial Salts in Treating Syphilis," either one of which is worth the cost of the whole volume. There is no question as to the value of this publication.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS. Comprising ten volumes of the Year's Progress in Medicine and Surgery. Issued monthly under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. II., General Surgery, edited by John B. Murphy, M.D., Professor of Surgery, Northwestern University Medical School, Chicago. The Year Book Publishers, 1901. Price $2.00, pp. 515, 12mo.

It is sufficient endorsement of this work that its contents has passed under the critical eye of Prof. Murphy. It is a splendid survey of the surgical labor of the year, as it appears in the current literature of the world, with valuable notes by the editor.

CORRESPONDENCE.

ALUMINUM MONEY.

PROBABLY every one with a modicum of esthetic taste, not to mention sanitary information, has been disgusted with the filthy condition of our paper currency. It is impossible to say just how much disease is transmitted by this medium, but the impossibility of quarantining against currency, the failure of the government to establish accessible offices for the redemption of infected or obviously dirty bills, the many hands through which they pass and the common custom of moistening the fingers with the lips and tongue, in counting rolls of bills, leave no reasonable doubt that diphtheria, the exanthemata, tuberculosis and other diseases are frequently communicated in this manner. Some physicians are said to wash or actually to disinfect paper currency but they certainly cannot refuse to accept dirty money nor can they disinfect their pocketbooks satisfactorily and most of us realize the utter impracticability of precautions against this mode of transmitting disease.

Coins are less readily infected and most metals—notably silver—are actually antiseptic even in the elemental state, yet coins are too little portable and too liable to accidental loss to answer the prime requisites of a medium of exchange, except for small amounts, a fact recognized by the limitation of the amount for which they are legal tender. A newspaper critic has called attention to the fact that "crisp" bills are mainly affected by fictitious personages in novels who give them to news boys, deserving widows and other worthy objects of charity but that they are universally regarded as a nuisance by persons in real life, their sole mitigating quality being their cleanness.

The recent introduction of aluminum as a substitute for cardboard, and its adaptibility for receiving almost any kind of marking known to the graphic arts, as well as to the art of engraving or stamping metal surfaces, suggests that this metal might well supplant our familiar paper currency. The present bills are almost universally folded into fours. Aluminum sheets of a corresponding size would be neither bulkier nor heavier than our present bills and the practicability of using sheets of this reduced size is established by the precedent of the fractional currency used during the civil war and until the resumption of specie payments by the United States. An immense amount of time and of losses by miscounting, would be saved by the use of sheets not requiring folding and unfolding and not especially liable to stick together. Aluminum sheets could also readily be perforated for ready determination of value and the prevention of fraudulent alteration of denomination, as is the custom in regard to checks, they could not be cut and pasted so as to make seven-eighths of a bill pass for an entire bill and they would be redeemable after exposure to water and degree of heat which would destroy paper money. Unlike paper, aluminum not only presents a surface for impressions by the engraver but it may actually be stamped or cut, like a coin. Aluminum is itself quite resistant to attrition and by suitable alloy it may be rendered almost absolutely proof against ordinary wear.

A. L. BENEDICT.

DR. VAN FLEET'S ADDRESS.

To the Editors of the MEDICAL TIMES:

The new president of the Medical Society of the County of New York, in his inaugural address, spoke as follows: To-day . . . the doors (of the society) are open to all reputable practitioners of medicine who are willing to declare their abnegation of sectarian principles and practice. Not that the applicant must declare that he will never resort to any one particular method of practice; that in itself ought to debar a man from membership in any society. It is certainly as illogical for a physician to declare he will not employ a particular system of practice, or a particular remedy or method, as it is for him to say that he will use no other. The Medical Society of the County of New York aims to include in its list of members all reputable practitioners of medicine who are willing to assert that they are not bound to practise any exclusive system." This, surely, is explicit and comprehensive enough to

satisfy every one of the 352 homeopathists estimated to be now legally practising within the limits of Greater New York. For did not their national organization some years ago put forth a special proclamation to the effect that homeopathists, so far from practising "any exclusive system," had an undoubted right, and were in duty bound, to employ, without regard to creed, every method and means known to medical science for the cure or relief of their patients—that the whole unbounded continent of therapeutics was as open to them as to those of the dominant branch? Notice, moreover, that there is nothing whatever in the words just quoted which implies the exclusion from fellowship of members of homeopathic teaching faculties or officers of homeopathic organizations.

Why then persist any longer in adhering to a designation and a motto which in the eyes of every intelligent medical man have entirely lost their original hostile and differentiating significance? The attitude of the allopaths in long-past days of intolerance may have compelled or justified the schism, but what rational excuse is there for refusing now to clasp hands across the bloody chasm which, through scientific progress on either side, has almost closed already? In some cases, no doubt, the inhibiting influence is self-interest—the love of lucre and of distinction so easily won by taking advantage of popular ignorance and prepossessions. On what plea has the establishment of State homeopathic Hospitals for the Insane been in recent years so successfully advocated? Not chiefly, if at all, because a noticeably larger percentage of recoveries from mental disease has been demonstrated to take place under homeopathic medication than without it. Were this the case, then, assuredly, ere now, would *all* the State Hospitals have been turned over to the new school. The irresistible argument has been that homeopathic treatment is preferred by such a large and intelligent proportion of our voting population that political managers cannot afford to disregard their wishes! Would the completion and triumphant dedication of the Hahnemann Memorial at Washington ever have been brought about, had not the fact been perceived and made the most of by its promoters, that this highly creditable work of art would be at once a most effective sectarian advertisement and an irremovable stumbling-block in the pathway to medical reunion? Yet, despite all this, I firmly believe that the greatest obstacle to that reunion has hitherto been the *lack of opportunity* for joining the general body of scientific practitioners. That this opportunity is now to be supplied, the presidential addresses of Drs. Reed and Van Fleet give us the strongest reason to hope. The Medical Society of the State of New York will probably soon be united with the State Medical Association, and its members will then become members of the American Medical Association. In taking this step, the Medical Society will, of course, renounce none of the liberal principles which now distinguish it, and these principles will inevitably prevail in the national organization, or, if all efforts to bring about reconciliation should be spurned, then Dr. Van Fleet assures us, "this society must go on in our own way . . . and from other States men will flock to our banners—as I am informed they are willing to do now—and we can not only build up and strengthen our society, but *we can create a national body which will fulfil the purposes for which such a body should be created.*" . . . One of the noblest of these purposes is the restoration of medical unity—so that it may again become "the privilege of every reputable physician to aspire to any position which a physician, by virtue of his being a physician, can hold," and to join, heart and hand, with the great majority of his brethren in their endeavor "to uplift the profession and protect the public health." E. D. N.

AN INTERESTING EXPERIENCE.

. . . This day of my somewhat unique experience was in February, 1885, in Northern Iowa, U. S. A. The day was dark with an invisible snow of a genuine Western blizzard accompanied with a stinging cold known only to the northern countries. Such a combination of atmospheric conditions must be experienced to be appreciated. The writer had hitherto lived in a more southern latitude and consequently had never learned to fear the weather on the score of coldness. There was much snow on the ground of a previous precipitate of the "beautiful" which had congealed into a crust sufficiently strong to bear up a horse, therefore the sleighing was excellent. The present snowing did not seem to accumulate upon the surface of the previous snowfall, but to fly like powdered glass in a horizontal direction. The wind blew at a terrific rate, which, together with the forty or more degrees below zero, fanned away the normal temperature of the living animal organism with alarming rapidity. This will afford the reader a faint conception of the real character of that memorable day of my first death.

This fearful hibernal day found me with an urgent call of professional duty to the bedside of a very sick young mother twelve miles away. I was young and very properly enthused with the dignity and sacredness of my chosen profession, and then such an imperative call to administer to suffering humanity meant "to do or die," so, as will be seen, I did both. Commercialism was not part of my stock in trade, but my mind was rather dominated with the spirit of the good Samaritan, which is not often the case with those older and wiser in the profession.

I started on my journey of duty and death about eight o'clock in the morning. I had been to attend this patient in the early part of the night before and had returned home before the thermometer began to fall, though there were unmistakable indications of the oncoming storm. My faithful but lazy old horse knew the way as well as myself and in such a storm much better, so I let him choose his course over the hard snow, my part being only to apply the whip when the animal was inclined to resume his favorite slow walk. When about two and a half miles from my office, I began to experience a drowsy sensation which merged into a feeling of revery akin to dreaming. I had none of the local pains of cold. My feet and hands were sufficiently protected to keep them as warm as the rest of my body, but, as I found out afterward, I was suffering a general lowering of temperature. Thereupon I lost all consciousness, and the case of the worthy young mother ceased to trouble my mind. Then, of course, too, I failed to apply the usual stimulant to my easy-going equine, which doubtless lapsed into his enjoyable snail's pace.

Just before my entire loss of consciousness, I found my mustache and that part of my whiskers not covered by my muffler congealed in a mass of ice formed from breath-moisture, but it gave me no discomfort. I was happy. One sees strange things at such a time. I was freezing to death, but, spare your sympathy, for like death from other causes, so far as known, it was painless, aye, even delightful. To me there was a general good feeling; I dreamed rapidly over the days gone by, of my boyish hopes and fears, delights and sorrows;

of the bare-foot school-girl for whom my heart first felt a passion. Then a poetic sentiment dominated my fast-dying mind, and the impressive scenes and sentiments of Alice Cary's beautiful little poem "Pictures of Memory," which I had memorized in my early youth, came like realities rapidly to my remaining consciousness. No death could have been more infatuating, and it still delights my memory.

I dreamed, and then I ceased even to dream. I knew nothing and went to no place beyond this mundane sphere. Utter consciousness ceased about eight-thirty that morning and continued up to about eleven o'clock that same forenoon. When my brain resumed its functions I found myself lying upon the floor of the kitchen of my patient's humble farm home, surrounded by the other inmates, who, with anxious looks were still rubbing me with snow and dosing me with hot and stimulating drinks. To these good people I owe both my death and life.

They had not expected me to start out in such a storm and therefore were not looking out for my coming. At about half past ten they heard a rubbing sound upon the front door, and not being able to look through the thickly frosted windows to ascertain the cause, the door was opened, when there was seen the Doctor's old horse "Steve" looking for better care at the hands of humans. Then they noticed that the Doctor was motionless and crouched over in his cutter, saying not "good-morning" nor any other verbal indication of being alive. They immediately realized what had happened to me and took me in their strong arms and laid me down close by a glowing cookstove, while not a moment was lost before the process of raising my temperature to the normal again. They did the best they could, and though not strictly scientific in all the details of their methods, nevertheless, they succeeded in kindling anew in my body the "spark of life" or rather the ensemble of functions which we call life.

When first taken into the house no pulse at the wrist could be found, no heart-beat heard, nor any breath detected by holding a cold mirror before the face. Doubtless I was "as dead as Julius Cæsar" or any other lesser personage whose body had ceased to functionate for the same length of time as had mine. Now, the point is, I *went nowhere*. To my individuality it was just as it was before I was born or before I was conceived. I was not. But I did not notice it, and neither will any one in my professional opinion. Nirvana was mine; the Seventh Heaven of Oblivion, and it was well. There were no troublous dreams to mar this sweet forgetfulness; no pain; no anything in fact.

. . . To be facetious, I say, since that day of my cold reception into what most people still regard as the "unknown," as soon as I came to know of the methods and delightful fancies of that old cult modernly dubbed "Christian Science," I have specially favored "absent treatment" as of signal use to the tired doctor lying in his warm bed while without the night is growing colder and colder, and the blasts of the blizzard sounds more blasting upon the midnight dreary, with a suffering patient twelve miles away.

In conclusion: I will some day die again, and sleep that endless sleep, as:

"THE OLD DOCTOR SLEPT."

"An old doctor once sat in his office at night
With his feet on the fender, his meerschaum alight,
And he thought, as the wreaths of the fragrant smoke curled
From the bowl of his pipe, of the ways of the world.

He, in fancy, went back to his young manhood days,
When the bright star of hope o'er his path was ablaze;
When his sky was as bright as the blue skies of June
And his ardent young soul for its work was in tune.

"And the work lay about him awaiting the skill
Of the brain-guided hand and an unflagging will;
And he bent all his energies, early and late,
To the service of those who were victims of Fate,
Who were sports of the Fates that had sent them to earth
With the seeds of disease thickly sown ere their birth;
Who, by parent, nurse, friend masquerading as Fate,
Were enmeshed in the dragnet of ill soon or late.

"And he knew that the law was in force now as when
It was written by Moses—that meekest of men—
For the sin of the father the child shall be scourged
Till the race of mankind of its sins shall be purged.
He, in mansions where wealth every want would supply,
Saw insatiate old Nemesis stand scowling by,
And he knew as he noted the lear on her face,
That the wealth of the world would not purchase her grace.

"He had seen smirking Folly lure youth to its doom;
He had seen Passion send victims unshrived to the tomb;
Stood in huts where the children of poverty dwelt,
And saw sights that the heart of a savage might melt.
Through it all the same dismal details unfold,
Day by day, like the plot of a tale that is told,
Till old Earth seemed a Tophet and life but a dream
Of a horrible Hell in an infamous scene.

"So, 'mid sickness and pain and misfortune and wounds
He had daily gone forth on his unending rounds.
Through the storm and the sunshine, the cold and the heat.
In his fight for a life he had oft suffered defeat;
But sometimes to the hearts of the watchers brought cheer,
Saw their smiles break, like sunrays, through black clouds of fear;
When, some day, by some couch of some sufferer—at last,
He would say—you may hope, for the crisis is past.

"Thus the years of his labors had slipped by apace,
Many friends of the oldtime had dropped from the race,
Passing down the still ways that the forefathers trod
To the long restful sleep neath the green thatch of sod.
With his labors, his years, and the cares he had borne
His brown locks had grown white and his strength had been shorn;
And his eyes, once clear-seeing, were dim and no more
Would the hand serve the brain as it served it before.

So he sat musing there in the warm pleasant glow
While without fierce old Boreas shaped the light snow
Into mosques and pagodas, domed temples and caves,
Into shrines for repentants, retreats for the knaves.
And he watched how the fuel to flame flashed and burned
For a while, then at last, into gray ashes turned,
And therein read the names, faces, stories of those
Once aglow with life's flame, fallen now to repose.

"And he smiled as the faces of friends came and went
And remembered how his life and theirs had been blent.

And he sighed as the ghosts of dead years were swept past
In the surge of the storm—on the wild tempest's blast.
Then, adozing, he fell and he saw far away,
Verdant valleys, green hills, where the warm sunshine lay,
Where was rest; not a pain; not a sorrow; none wept.
By his grate, in his arm-chair, the old doctor slept."

G. A. NORTON, M.D.

Aurora, Ill., Oct. 10, 1901.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON OTOLOGY.*

Specimen of Brain Abscess—Dr. Edward B. Dench presented a specimen which was removed from a boy about eight years old, who came to the clinic apparently suffering from an acute mastoiditis. Two or three drachms of foul fetid pus was evacuated from beneath the periosteum of the mastoid; a typical mastoid operation was then done. A few days later the child suddenly developed a temperature of 104° F. Cheyns-Stokes breathing and a rapid and feeble pulse and died. At autopsy an abscess was found occupying the right lobe of the cerebellum, and there was a point about the size of the tip of the probe on the sinus wall which was carious. The internal wall of the sinus was necrotic and led into a large abscess cavity. The case was instructive in that it showed how, in spite of the most careful operative technique, such a condition may escape observation. Until just prior to the patient's death there were no symptoms whatever, yet there was pus in the later sinus and an extensive abscess in the cerebellum.

Specimen of Brain Abscess with Portion of Temporal Bone.—Dr. McKernon presented a specimen which was removed from a sixteen-year-old boy whose left ear had been discharging, intermitting with attacks of pain, for the past twelve years; the discharge was always foul. Six weeks ago general headache appeared which had continued since. Chills and fever appeared with no tendency to periodicy. For about a week before operation he was apathetic and drowsy and, during last three days, he was in a muttering delirium. For about one month he has started suddenly from his sleep, yelling at the top of his voice, and suddenly subsiding to sleep again. For a week he has not been able to answer questions intelligently. There was aphasia, both a tendency to misname things and an inability to state the names of articles with which he must have been familiar. After being about the ward an hour, his respirations became suddenly very bad, and when, immediately afterwards, he was seen, they had stopped altogether. During the following two and a half hours artificial respiration was done, the pulse remaining good. Then the movements were discontinued, and about forty minutes later the pulse ceased to beat. The patient did not breath after the artificial respiration was stopped. At autopsy a soft spot was found over the left temporo-sphenoidal lobe, and adhesions encountered over the tegmen tympani which were quite firm. In the endeavor to remove the brain an abscess in the left temporo-sphenoidal lobe was ruptured and a large quantity of greenish, foul-smelling pus evacuated. A discolored spot was seen to occupy the entire outer aspect of this lobe and just below, corresponding to the tegmen tympani, was a pale-looking spot with a depression, giving the appearance of its having been the path of infection. A clear path of infection was demonstrated from the middle ear through an opening about one-sixteenth of an inch in diameter in the tegmen tympani in front of and to the outer side of the superior semicircular canal. The pus showed infection but no tubercle bacilli.

A Case of Mastoid Neuralgia in Which Paraffine and Iodoform Was Used.—Dr. William H. Haskin presented this case, in which he had enucleated the entire mastoid and then filled the opening made with paraffine and iodoform, 30 per cent., first closing the opening into the attic in order to prevent its entrance into it. At the time of showing there was a slight otorrhea but no pain. Union by first intention was secured.

Successful Operation upon a Case of Brain Abscess Following Suppurative Middle Ear Disease.—Dr. F. L. Jack of Boston presented this paper and stated that the study of brain abscess had received fresh impetus in 1893 from the work of Macewen, which placed the subject on its proper plane whether regarded from the scientific or purely practical standpoint. The prognosis had steadily improved. As against eight recorded successful operations up to 1889, Marsh found reports in 1898 of 60 successful operations upon temporal, and 12 upon cerebellar abscess. The exploratory operation proceeds in the direction of the temporo-sphenoidal lobe over the tegmen tympani unless cerebellar symptoms are present. The chance of relief by absorption or spontaneous discharge he considered to be too remote to justify expectant treatment. Macewen stated that operation through the tegmen tympani was inadequate for the thorough evacuation of the abscess. He then cited a case that proved an exception to that statement. A man, twenty-five years old, had otorrhea during the past year, with one intermission. Six weeks before admission he complained of frontal headache; two days before admission of severe headache and earache. Aural examination showed signs of acute inflammation with a small amount of pus. Temperature was 101° F., falling to 99° F. The pulse was from 60 to 70. Seven days after operation the patient had a chill and complained of intense frontal headache. Temperature rose to 102° F. the pulse to 90. *Extra-dural* operation through the sclerosed bone found the antrum filled with pus, softened bone, granulations and purulent matter. The bone was removed over an area one inch in length and one-half an inch in breadth. The lateral sinus was exposed for an inch. The dura was of normal color and did not bulge. Bacteriological report showed mixed infection. Eighth day the patient was unconscious, with pupils contracted; the temperature was 98° F. and rose rapidly to 103° F., the pulse 102 falling to 60. Convulsions appeared in the hands and arms. The patient was deeply comatose during four hours preceding operation. *Intra-dural* operation was then performed. The bone opening was enlarged and a marked bulging of the dura was found, but no opening to it. Introduction of the hypodermic needle into the brain revealed pus. An opening made by a narrow knife and enlarged by forceps, evacuated four ounces of foul pus and sloughing brain tissue. The temperature fell to 99° F. in twelve hours and the patient became rational. Removal of the wick was followed by a discharge of about one-half ounce of fetid pus. Improvement in the physical condition and in mental state was rapid, but aphasia appeared and persisted. There was swelling of the optic disk more marked on the left, but there was no hemianopsia. The patient was discharged practically well twenty-seven days after operation. The aphasia disappeared in the

* Stated Meeting, held January 9 1902.

course of another month. He said that this case illustrated the fact that cerebral abscess does not necessarily produce bulging of the dura or abnormal appearance of this membrane; but in the absence of such signs it seemed wise not to explore the brain unless definite symptoms of abscess appear. The case also showed that separate opening of the squamous portion by trephine or chisel was not invariably necessary. The opening through the tegmen tympani had the advantage of lessening the danger of brain hernia, though this consideration should not deter the operator if any question existed as to the complete evacuation of the contents of the abscess.

Study of the Aphasia Persisting During Convalescence after Evacuation of Brain Abscess.—Dr. G. L. Walton of Boston read this paper, and stated that this subject had received more attention from a neurological than an otological point of view. Descriptions of the speech defect, with the exception of the report of Marie and Sainton, were brief but all pointed towards sensory aphasia, particularly that of the auditory type. In the analysis of Dr. Jack's case answers were obtained to the thirty-four questions suggested by Bastian for the systematic examination of aphasia and the results showed difficulty in understanding spoken or written language except the simplest, impairment of spontaneous speech (paraphasia), and difficulty in writing either spontaneously or to dictation. The difficulty in writing was practically identical with that of speaking. The auditory word center itself was not necessarily involved, for it was probable that the moderate word deafness was due to impaired conduction of the afferent fibers to the auditory word centers (subcortical sensory aphasia). The paraphasia may well have been due to imperfect conduction between the temporal convolution and that of Broca (conduction aphasia of Wernicke). The difficulty in recalling the names of objects seen and recognized was probably due to imperfect conduction through fibers connecting the visual and auditory centers, rather than to disorder of the visual center itself. The difficulty in writing to dictation would indicate, according to Bastian, impairment of fibers passing in the opposite direction. This study, while showing the accuracy with which we may differentiate sensory from motor aphasia, illustrated our limitations in the attempt to establish the degree in which the different elements of the speech mechanism are affected in a given case. It also illustrated the justness of the position maintained by Collins and others that the inter-dependence of the three centers rendered the entire language zone liable to disarrangement upon disorder of any part of the mechanism. When we remember, further, that in most of these tests the patient was required to reproduce diverse associative memories, not only assuming integrity of fibers connected with speech centers, but also of fibers connecting them with the entire association cortex, the futility became apparent of attempting to interpret the various defects by lesions limited to definite centers and definite groups of fibers passing to and from these centers. This examination, he said, tended to corroborate the view that there was no writing center in the sense of a center in which were revived the kinesthetic memories of written words, and which was capable of stimulations independently of Broca's convolution.

Dr. Leszynsky regretted that it was commonly believed unnecessary to seek the counsel of a neurologist in these cases, for the surgeons assumed that the neurologist could not throw any additional light upon the subject. If the neurologist could be enabled to examine these cases earlier, when there might be only slight interference with the speech centers, etc., and also be permitted to study such cases more thoroughly, he thought that much more would be accomplished, in time, in the direction of a correct diagnosis before operation.

Dr. Edwin W. Pyle of Jersey City said that Körner stated that the presence and location of an abscess may be *inferred* but he gave nothing positive about it. Dean stated that it was exceedingly difficult to locate an abscess in the brain, or to diagnose between a meningitis and a brain abscess; when there was pressure we could not tell the localized and the generalized symptoms. To him it seemed that the border-line symptoms in brain abscess were very misleading. He had seen more abscesses of the brain, comparatively speaking, discovered by accident, than were really diagnosed from symptoms.

Dr. Dench, in referring to the opening through the squamous plate of the temporal bone, believed that it was much easier to make an exploratory opening above the meatus than to take the narrow route through the roof of the antrum and of the middle ear.

Dr. Lederman referred to a paper by Mr. Ballness of London in which was emphasized the importance of going into the brain structure with a knife, as a number of instances of brain abscess had not been found and had been passed through with an exploring needle, which had not permitted the pus to flow into the canal. In one instance the needle had not gone through the abscess capsule.

THE NEWER TREATMENT.

1. GYMNASTICS IN THE TREATMENT OF HEART DISEASE.
2. WHY ALTITUDE AFFECTS THE TREATMENT OF PHTHISIS FAVORABLY.

1. GYMNASTICS IN THE TREATMENT OF HEART DISEASE.

SOME twenty years ago two German physicians, Drs. August and Theodor Schott, published some observations on a new line of treatment which they had introduced for cardiac disease. Although the results which they reported must be considered remarkable on account of the nature of the disease they treated, yet for ten years their methods did not attract much attention from English or American physicians. It was not until 1891 that Dr. Theodor Schott communicated to the *London Lancet* a description of his methods that English-speaking physicians began to adopt his ideas. In the past ten years a number of English physicians, such as Thorne, Broadbent and Stewart, had published their observations, and in consequence the method became popular in England, although its introduction by the American profession at large has not been very extensive as yet.

The English physicians have been very glowing in their description of the recoveries following this treatment; but, as is usual in the introduction of something new, there is a dispute as to whether these German physicians deserve the credit for introducing these ideas into cardiac therapeutics. It is claimed by some authorities that the credit should be given to Professor Beneke, and that Schott was simply an assistant carrying out his ideas. On the other hand, it is claimed by other writers that Dr. Groebel was the originator of this method of treatment. Be that as it may, it is undoubtedly due to the Schotts to acknowledge that they had given it the element of promise which has attracted attention to it in America.

There are two divisions of treatment as carried out at Nauheim. The first is the use of a systematized series of baths, and the other is a method of exercise, called by Schott "Resistance-Gymnastics."

The cases which are treated are generally those of dilatation or of injured compensation which are associated with lesions of the valves. These are acted upon in three ways: First by treatment directed towards the peripheral vessels and blood spaces; secondly, by the effect of thermal saline and carbonated baths, and thirdly, by the system of gentle exercises. The baths have not been introduced in America in any great extent as yet, and while they are important they are not regarded as an absolutely necessary part of the treatment, although the baths alone are reported to have resulted in very excellent results. Of course, at Nauheim it is possible to go into greater details in regard to baths, and they are given in the natural waters of that point in gradually increasing strength. These waters being of various temperatures and carbonated, contain naturally a number of alkaline and natural salts. Schott, however, has given a description of the essentials of the bath and has explained most unselfishly how they can be made artificially by the use of heat and the introduction of the proper agents into the water. His formulas call for the use principally of sodium and calcium chloride and the addition of free carbon dioxide. This latter gas is released from reservoirs or evolved in the bath by the use of chemical reagents, hydrochloric acid and the bicarbonate of sodium.

When it comes to the question of the gymnastics these can be more easily managed by the American practitioner. As one observer has written, the term "resistance exercises" is one that does not describe the proper idea; it should be, rather, "gently resisted movements." The patient is directed to make very slight efforts with various muscles and these are as gently resisted by the operator. As time goes by this resistance is gradually increased, calling upon the patient for greater exertion of the number and agreeable movements are altered to suit the patients needs. They may last from twenty minutes to an hour.

Short intervals should be allowed for rest and the exertion must not be too great. The patient should remain master of the situation at all times, and he should be instructed to breathe quietly; this point is of considerable importance. The operator should not grasp or in any way control the patient's limbs, but simply should be opposed by the operator's hand held flatly.

The following are the details of the rule to be followed in this course of treatment:

1. Each movement is to be performed slowly and evenly, that is, at a uniform rate.

2. No movement is to be repeated twice in succession in the same limb or group of muscles.

3. Each single or combined movement is to be followed by an interval of rest.

4. The movements are not allowed to accelerate the patient's breathing, and the operator must watch the face for the slightest indications of (*a*) dilatation of the alæ nasi; (*b*) drawing of the corners of the mouth; (*c*) duskiness or pallor of the cheeks and lips; (*d*) yawning; (*e*) sweating, and (*f*) palpitation.

5. The appearance of any of the foregoing signs should be the signal for immediately interrupting the movements in process of execution, and for either supporting the limb which is being moved, or allowing it to subside into a state of rest.

6. The patient must be directed to breathe regularly and uninterruptedly, and should he find any difficulty in doing so, or for some reason show a tendency to hold his breath, he must be instructed to continue counting in a whisper during the progress of each movement.

7. No limb or portion of the body of the patient is to be so constricted as to check the flow of blood.

The details of the exercises are as follows:

1. Arms extended in front of body on a level with shoulder, hands meeting; arms carried out until in line and brought back to original position.

2. Arms hanging at sides, palms forward; arm flexed at elbow until tips of fingers touch shoulder, back to original position; one arm only moved at a time.

3. Arms down, palms forward, arms carried outward and upward until thumbs meet overhead; back to original position.

4. Hands in front of abdomen, fingers flexed so that second phalanges touch those of opposite hand; arms raised until hands rest on top of head; back to original position.

5. Arms down, palms against thighs, arms raised in parallel planes as high as possible; back to original position.

6. Trunk flexed on hips; return to original position.

7. Trunk rotated to left—to right; return to original position.

8. Trunk flexed laterally.

9. As No. 1, but fists clinched.

10. As No. 2, but fists clinched.

11. Arms down, palms against thighs, each in turn raised forward and upward until arm is alongside of ear, then turned outward; arm descends backward.

12. Arms down, palms to thighs, both together moved backward in parallel planes as far as possible without bending the trunk forward.

13. Thighs in turn flexed on trunk, opposite hand resting on chair.

14. Lower extremities in turn extended fully, and bent on trunk forward and backward to extreme limits of movements, opposite hand resting on chair.

15. Legs in turn flexed on thighs, both hands on

16. Feet together, lower extremities in turn abducted chair.

so far as possible and brought back to original position, opposite hand on chair.

17. The arms, extended horizontally outward, are rotated from the shoulder-joint to the extreme limits forward and backward.

18. The hands in turn are extended and flexed on the forearm to extreme limits and brought back in line with arm.

The difference between the Schott and Groebel exercises is that in the former treatment there is a great deal of emphasis placed on treatment of the region of the heart, the manipulations beginning with superficial massage, involving the back and limbs. Slowly the exercises are increased, the passive form giving way to the active, while in Dr. Groebel's treatment the patient is directed to take long, deep inspirations between exercises, while the condition of the skin, the tendency to sweat, etc., is more closely watched.

The report of cases following this line of treatment is of course of great interest. There have been reported many cases in which there is a diminution in the area of cardiac dulness, a change in the position of the apex beat and marked decrease in the pulse rate. Naturally, there has followed from this a diminution in the symptoms of the heart trouble. In one case in which three diagrams of the case of dilatation of the heart were prepared which was treated by this method, there was seen following the treatments a great decrease in the area of

cardiac dulness. At first, the right border of dulness was found to be nearly an inch to the right of the sternum, while later it receded to the middle of the sternum, while the left border also retreated. The apex beat receded from the sixth interspace in the nipple line to the fifth interspace and fully one-half inch within the nipple line. The pulse dropped from about 90 to below 70, and the patient was free from dyspnœa, and, in fact, had no cardiac symptoms at all. The volume and strength and pulse had increased; the rhythm had become regular. Another case of arteriosclerosis showed improvement so that a very pronounced albuminuria became greatly diminished; the dropsical condition of the patient improved and there was a more satisfactory action of the heart and lungs, although the case, of course, as should be expected, only improved up to a certain degree.

The tests of the value of this method of treatment are concisely stated by Sir Philip Smiley, as follows:

"1. That the movements relieve the back pressure on the heart.

"2. That the diminution in the size of the heart is due to the absence of excess of blood in its cavity.

"3. That this is attained by there being more room in the arteries.

"4. That the heart-muscle gains strength by having room to contract.

"5. . . . That the contraction being more complete, it takes a longer time, thus making the pulse slower, and, at the same time, fuller.

"6. Being able to send on more blood, it is ready to receive more, and thus removes venous congestion.

"7. The strength gained by the heart is due to the freedom to contract fully."

On the other hand, Dr. Bezley Thorne says: "The results, in fact, are such as would scarcely be believed by any one but an eye-witness. It is by no means uncommon in cases of dilatation to see within one hour the oblique long diameter of the heart's area of dulness diminish by from three-quarters of an inch to an inch and a quarter, and, perhaps, more surprising still, to observe a diminution of as many as two inches, in vertical measurement, of the liver, which at first extended to the umbilical level, and to hear the patient, at the conclusion of what cannot be described as an ordeal, volunteer the statement that a load has been removed from the pre-cordia, that he breathes more easily and more deeply, and experiences a sense of general relief. Such gains are not permanent, and in the time that intervenes before the next day's exercises, or baths, the dilated and congested organs tend to resume their former size, but do not wholly relapse. The slight proportion of the gain is held until as the result of treatment, perhaps at the end of a few weeks, the dilated heart and the congested liver have recovered their normal dimensions, or at any rate such contraction and compensatory power in the one case and resolution in the other as to make them practically sound."

Stewart finds that the result of his personal experiences in this line of treatment the following conclusion: (1) That in a large proportion of cases it affects immediate improvement in the condition of the heart as shown by percussion and auscultation; the sounds becoming more distinct and the area of dulness diminishing with greater or less extent. (2) That in many cases the rhythm of the pulse improves and the beat becomes more vigorous. (3) That while the immediate effect is in so far temporary, the heart rarely goes back to its previous condition of dilatation but remains somewhat smaller than it has been before the exercises, and that gradual improvements of a lasting kind sets in so that the heart recovers its tone and the area of dulness permanently diminished.

There are counter-indications against the treatment, such as decided degeneration of the cardiac muscle, aneurism and extensive arterio-sclerosis. But as experience with the treatment widens some of these conditions are not so much regarded as counter-indications as formerly, so that now the only absolute counter-indications are cases of marked atheroma and cases of advanced aneurism. Dr. Thorne states that he has seen improvements amounting to practical cure in cases presenting the physical signs regarded as indicative of the following affections: Stenosis, of either the aortic or the mitral orifice, stenosis of both, insufficiency of either or both, with attendant dilatation; dilatation consequent on myo-carditis, on habitual hemorrhage, and on constitutional anemia; fatty heart, weakened heart, congenital mitral insufficiency, patent foramen ovale, angina pectoris of both neurotic and organic causation.

The theory by which this is accomplished is as follows: This gently resisted movement dilates in turn the peripheral vessels in every section of the body and distend the lymph spaces, and thus by employing for therapeutic purposes the pumping action of the muscles and relieving the veins, securing increased filling of the artery and better emptying of the heart. The practical result of this is by increasing the volume of circulation in both arteries and veins by better filling of the vascular system generally, including lymph channels and lymph spaces, and thus affording a much larger peripheral area for the blood, the left heart is better emptied by invitation of the blood out of the capillaries, the arteries and the aorta, and back pressure upon the left auricle being relieved, the right heart is relieved through the pulmonary circulation, and thus the veins are further emptied. As a result the congested liver is frequently diminished in size. In short phrase, the "peripheral pump" is substituted for the "central pump," and thus, the latter being able to contract upon the lessened quantity of blood, becomes able to do its work once more, and all this without the use of any drug, although, of course, judicious medication can be used from time to time.

2. WHY ALTITUDE AFFECTS THE TREATMENT OF PHTHISIS FAVORABLY.

It is curious to note that so little is known on the subject of the effect of altitude upon the human organism. Human beings were made to live within a certain limit above the sea level, and it is astonishing that more investigations have not been made upon the subject. We are all well acquainted with the effect that a rapid change of altitude, as upon a balloonist, and we know something of "mountain sickness." These disturbances were thought for a long time to be due to the diminished amount of oxygen in the air, for it was reasoned that these symptoms, which resemble to a certain extent sea-sickness, must be caused by lack of oxygen, because there is a diminished barometric pressure at a high altitude, and that therefore the molecules of air were more widely separated than at the level of the ocean, and that, therefore, the lungs must absorb less air. But now it is known that these symptoms are not due to this cause but rather to a diminution of "oxygen tension." It has been proved that at any height which a man has reached there is enough oxygen to maintain life, but by the wisdom of a Divine Creator the oxygen can only be got into the blood under a certain pressure, and that at these great heights the tension is so reduced

that the blood is not able to absorb enough oxygen to carry on life comfortably.

Solly has explained this very clearly, as follows: "That life is maintained under these circumstances is because nature steps in and, by producing certain blood changes of which we shall proceed to speak more in detail, compensates for the disabilities produced by the diminished "oxygen tension." It is recognized that the red blood-cell, by the intervention of the hemoglobin which it contains, is the vehicle whereby the oxygen is absorbed. In normal man the number and size of the red corpuscles and the percentage of hemoglobin always bear a definite proportion to the atmospheric oxygen-tension, so that when the oxygen-tension diminishes the number of red corpuscles and the percentage of hemoglobin proportionately increase. This has been proved by many eminent observers in the laboratory and at high altitudes in the Alps, the Andes and the Rocky Mountains. Charts have been drawn to exhibit the blood curve, clearly representing the increase of red cells, observed to exist in an ascent from sea-level to an elevation of 15,000 feet. It will be observed that the ratio of red blood-cells always increases in direct proportion to the elevation at which the observations were taken. There is no striking change made until an elevation of 4,500 feet is reached. At the Colorado Springs, which stand 6,000 feet above sea-level, the increase would be about one million, making six million red blood-cells, with a proportionate increase in the percentage of the hemoglobin."

There is also a stimulant action upon the heart, and as the blood-pressure is lowered, it accounts for the well-known clinical fact that hemoptysis is less apt to occur in a high than in a low country, and internal congestions are relieved. The dryness of the air causing greater evaporation from the lungs and skin also calls for increased activity of secretion. The hot sun alternated with the cool air acts as a healthy stimulant to the nervous system. For all these reasons appetite, digestion, and functional activity are benefited.

The therapeutic value of these elevated climates is shown principally upon the consumptive, for a person whose blood count is below the normal will gain more rapidly than the healthy man. The reason why there has not been more success in the treatment of consumptives at high altitudes is due to the fact that, as a rule, the consumptive does not stay long enough to get the benefit of the change of climate. It is advisable that he should remain after all active processes have ceased for at least a year. Solly bases his observations on analysis of 8,000 cases of phthisis, but he notes a warning in stating that prudence and accurate knowledge of the dangers run is the first essential of the successful use of the altitude cure. He says that a high altitude is a bad climate for the invalid fool. "To send a sick person to an elevated resort, without due consideration not only of his disease, but of his resources and his characteristics, is wrong, and when the choice is made, it behooves the physician to put his patient directly in the hands of a resident physician, not necessarily for medical treatment, but that he may be under observation and control."

It is well to remember that all cases are not necessarily benefited by altitude; there must be enough healthy lung tissue to dilate and meet the requirements for additional pulmonary tissue, and there must be a heart capable of bearing the brunt of the increased pressure and the demands made upon it. In this connection there was an interesting case reported some time ago by a patient who had marked fibroid phthisis. This woman had frequent hemorrhages and her lung space was so contracted that she breathed with great difficulty. In removing a tooth she was given nitrous oxide gas, and her efforts to breathe made a great difference in the expansion of the chest, calling into action large portions of lung which had been entirely quiescent or out of use. She found the relief afforded was so great that for five or six years before death she was given nitrous oxide gas regularly to excite forcible expansion.

Walters has compared the results obtained in Alpine and non-Alpine sanatoria, with the conclusion that very good results are obtained in the latter. In 1541 phthisical patients treated in non-Alpine sanatoria, improvement had taken place in 85 per cent., local improvement in 61 per cent., and complete restoration in 8 per cent. Walters states that there are in Germany forty-three sanatoria and that the German sick insurance company had set aside in 1899 between three and four million marks for similar purposes.

Trudeau has described the workings of the Adirondack Cottage Sanitarium and gives the report of laboratory work. In one report he states that of 203 patients who remained an average of nine months, 70 were apparently cured; in 61 the disease was arrested; 40 were improved, and 26 were unimproved, and 6 died.

Turban reports, however, better success from the high altitude sanatoria, for 66 per cent. of all the patients were discharged in a normel state of health and from one to seven years later 48 per cent. still retained their health. Of patients in the third stage, with extensive and serious disease, 17 per cent. were cured, while of those of the first stage, with only slight tuberculosis in one lung, 97.5 per cent., or almost all, were permanently cured. No low altitude sanitorium shows such results as this.

THE TREATMENT OF EMPYEMA.

The patient of whom I speak is an Italian of sixteen who was admitted to the hospital two months ago. His history included pain in right shoulder, cough with some expectoration, and a suden attack of severe dyspnea, which gradually grew less. A small amount of fresh blood was spit up at one time. The diagnosis of pneumothorax following pneumonia was made. After a time empyema was suspected to be following this condition, and an operation was considered.

When one talks about an exploratory operation it is a procedure in which he is not at all sure of the result. I am opposed to them as a rule. In the abdominal cavity, for instance, the surgeon puts in a finger or two or even his whole hand and endeavors to decide a case where perhaps at a post-mortem it will take two hours with free access to all the organs to find the true cause of the disease. In this case the interspaces were distended, there was change of dulness when the patient was lying down or sitting up, and as the operation really involved no risk there was no reason why the chest should not be opened. This was done one week ago to-day, and two quarts of pus was removed. The boy has been improving since, and we see no reason at present why he should not get perfectly well.

In regard to removing the pus in these cases, I think it is better to give the patient ether and do a dissection with a knife. Aspiration is more in the nature of an exploratory operation and is not as successful in all cases. Sometimes pus is not obtained at all. Either the material is too thick to be drawn off in this way, or the real pus cavity has not been entered by the needle. I have known cases where this means failed and the patient dying, a post-mortem revealed the fact

that pus was present and had not been found by the method employed.

As to the entrance of air, it gets in even if an aspirating needle be used, and there is no great harm done even if air does enter, hence nothing is to be gained in this respect by using a needle in preference to an incision. It used to be the custom here if aspiration failed to insert a hooked needle through the puncture, pass it around two ribs and by this means draw a drainage tube through. This method is not so satisfactory as a simple incision.

I wish also to speak about the location of the incision. It is generally considered best to make the opening low down and well posteriorly. As the result of my experience in dealing with these cases, I do not believe this is the best place to open the chest. For some reason or other, the fluid works toward the front and high up in the pleural cavity. If the condition is allowed to run and pus makes an opening for itself, it is always rather high up. Besides this, one cannot tell the state of adhesion that exists at the lower part of the cavity.

I asked the surgeon in this case to make the opening in the fourth interspace and in the anterior axillary line. The two quarts of pus were evacuated without any difficulty. A drainage tube extends to the bottom of the cavity, and the patient can be easily turned on his side and the pus drained out at any time he is dressed. I remember one patient some years ago who had a drainage tube around two ribs, as mentioned before. But little pus drained away, and one of the residents kept insisting that an opening be made lower down. This was not done, however, and the patient finally died. A post-mortem showed that an opening should have been made higher in the chest. The condition there, as in many of the cases where low openings are made, was this: The triangular portion of the pleural cavity between the chest wall and the diaphragm is at first distended and full of pus. When this is drawn off the surfaces adhere, and this leaves the opening that has been made below the cavity instead of into it. For this reason pus will not drain away as it should. If the opening be made well up this difficulty is avoided. The position of the incision in this case is the one I prefer in all instances.

Governor Odell signed the bill abolishing the Boards of Managers of the State Hospitals for the Insane. These hospitals are the Manhattan Hospital and the Long Island Hospital, in New York; the Hudson River Hospital, at Poughkeepsie; the Homœopathic Hospital, at Middletown; the Matteawan Hospital, at Matteawan; the Utica Hospital, at Utica; the Williard Hospital, at Ovid; the St. Lawrence Hospital, at Ogdensburg; the Buffalo Hospital, at Buffalo; the Rochester Hospital, at Rochester, and the Gowanda Hospital, at Gowanda.

The boards of managers of these institutions will lose their offices on April 1st, the State Commission in Lunacy will then assume charge of the hospitals, and the Governor will appoint boards of visitation for each.

In giving his reasons for signing the bill, about which there has been much discussion, and not a little acrimony displayed, Governor Odell dismisses with a pargraph the question of the legality of the act, relying on the opinion of Attorney-General Davies that it did not conflict with the State constitution. He calls attention to the fact that the measure proposes to retain all the officials now in office, except in one instance, and to guard them from removal except for cause. He reviews the results of the investigation made last summer into the working of the present plan, quotes Governors Cleveland, Flower, Hill and Black as favoring a change to the new plan of consolidation, and shows where exorbitant sums have been expended for the maintenance of certain institutions, and also that frauds were practised and money spent that could not be accounted for. Boards of managers, he says, have been regaled with most elaborate fare, and have audited a bill of $1,000 for wine, strawberries at $1 a quart, and brook trout at $1 a pound, all for their entertainment.

The Governor makes a direct accusation of failure on the part of some members of the board of managers to fulfil the duties of visitation, with which they are charged under the statute. At the hospital in Utica, he says, $600,000 was expended between 1866 and 1899 for improvements, betterments and additions, with an increase in capacity of only sixty beds—in other words, a cost of $10,000 for each bed.

The present bill, the Governor urges, proposes to correct this condition by placing absolute and entire control in the hands of one management.

Dr. Herman Knapp says that in the feeble-minded when there is an anatomical defect education would avail nothing, but where there is defect of environment or of the sensual organs the development could be made normal by correcting these defects. The visual organs are certainly the main avenues of thought. Nearsighted children are not, as a rule, stupid, and the child that is born blind is not stupid, but it has no visual memory. There is an optic memorizing center and an acoustic memorizing center; they are not identical. At one time he had operated upon a boy of 14 years who had been born blind. A cataract was removed and the sight perfectly restored, but at first the boy had been unable to speak the names of common objects. However, if they were handed to him so that he could feel them he was at once able to give the correct names. Although he had been blind all these years and had but little education, he had learned very quickly after the restoration of his sight and at no time had he been stupid or mentally deficient.

EDWIN W. PYLE M. D.

Dr. Edwin W. Pyle died at his home in Jersey City February 7th from pneumonia, at the age of fifty-three. He was born in Unionville, Pa., and has been in practice since 1874. In addition to his large general practice, he has been for the last five years connected with the New York Eye and Ear Infirmary, where he was an assistant surgeon. Dr. Pyle was an authority of standing in his specialty, and he has written voluminously for the medical press of late, in this line, in a practical and interesting manner. The cause of progressive, liberal medicine loses an earnest and intelligent worker in its behalf, in the death of Dr. Pyle, which is greatly to be lamented.

PAUL F. MUNDE, M.D., L.L.D.

Dr. Paul F. Munde died in this city February 7th of disease of the heart, at the age of fifty-six. He was eminent in the department of gynecology and obstetrics, and for many years editor of the *American Journal of Obstetrics*. His record shows what may be accomplished in an active life of hard work. His untimely taking off is to be sincerely regretted.

MISCELLANY.

—Tarnier said in 1873 that no woman on a milk diet ever has eclampsia, and Pinard's experience fully confirms this view.

—Gilles de la Tourette, the eminent alienist and distinguished pupil of Charcot, has himself become insane, and is in an asylum.

—According to the latest governmental statistics, each physician in the United States has 655 persons to look to for his support.

—Whatever else you do in internal carbolic acid poisoining, give at once a large dose of alcohol—whiskey, brandy, rum or gin will answer—and repeat it often.

—There was an old doctor, a long time ago,
Who hired a fellow to shovel snow,
But instead of a shovel he gave him a hoe,
For he was a Hoe-me-a-path, you know.

—Dr. Schenk, of Vienna, announces that he has perfected his theory of sex determination so that he can secure either male or female child, as desired, with unfailing certainty.

—Budberg says that the best way to treat the umbilical cord is to wrap it in cotton soaked in alcohol. This is an efficient antiseptic, and at the same time causes drying of the cord.

—Dr. J. W. Crofford, Lamoni, Iowa, has been taken to Fort Madison to serve out his sentence of thirteen years' imprisonment for criminal abortion and murder in the second degree.

—England's oldest physician, Dr. J. W. Edgar, died recently at Monkseaton at the age of 99 years. He had two brothers, also doctors, who died at 94 and 93 and a third brother doctor cut off at 80.

—The value and importance of fruits as food are said to be in the following sequence: Apples, grapes, bananas, oranges, peaches, pears, apricots, pineapples plums, strawberries, raspberries, blackberries.

—It is reported that Noah Raby, the well-known centenarian, who for thirty years has been an inmate of the Piscataway Poorhouse, near Plainfield, N. J., is suffering from an attack of measles. He boasts of having lived for more than 128 years, and is believed to be the oldest person in the United States.

—The Circuit Court of Michigan has decided that the Battle Creek Sanatorium is a charitable institution and as such is exempt from taxation. The institution sued the city for $5,245.35 taxes paid under protest and has received a verdict, with interest. The case will probably be carried to the Supreme Court.

—Permanganate of potassium has, for some time past, been employed as an immediate antidote to the influence of morphine and other organic poisons. A foreign writer recently suggests permanganate of sodium as equally effective with the potassium salt, and devoid of poisonous properties in any but enormous doses.

—The newspapers report that the experiments upon the the production of yellow fever by the bite of infected mosquitoes have been brought to an end by the death of two subjects. The earlier experiments led the commission to believe that a mild yellow fever might be inoculated in that way, conferring immunity at very slight risk of life.

—A hypochondriacal form of insanity is prone to attack individuals who have been addicted to hard drinking in former years, but have abstained altogether for some time; until a reverse in business or the death of a relative upsets a brain already weakened by early excesses, and a melancholia is induced, which frequently proves incurable.

—According to E. Coni, in *Rev. Med. d. Uruguay*, the annual mortality per 1,000 has averaged 14.11 in the last seven years at Montevideo; 17 at Buenos Ayres; from 35.5 to 59 at Santiago de Chile, and from 22.9 to 45.4 at Rio. At Lima the average for five years is 42.8. Pulmonary tuberculosis is responsible for 25 per cent. of the mortality in Peru.

—When lime has got into the eye, something must be done at once. Wash the eye thoroughly with a large quantity of warm water—for a little water but adds to the trouble by slacking the lime—and then introduce a solution of sugar and water. This is superior to solutions of vinegar or dilute acids because sugar forms an insoluble compound with lime.

—MacCarry (*Australasian Med. Gazette*) says that every physician should be able to diagnose certain diseases by their odor, that of mice in favus, peculiar acidity in rheumatism, nauseous breath in pyemia, putridity in scurvy, musk in peritonitis, sour beer in scrofula, ammonia in simple fever, new bread in intermittent, and violets or pineapple in female hysteria.

—The use of the telephone in surgery is a new safeguard, especially in probing for foreign bodies. It requires the use of an assistant who declares whether the pincer-like ends have closed over the body or not, this being evident by a noise audible over the telephone extensions. There is no sound when tendon, bone, or flesh is grasped, the circuit being closed only by metal.

—When a patient has been very badly injured, remember, says Lilienthal, that a condition of buoyant cheerfulness is an indication of shock rather than of vitality, and do not let it lead you into the idea that the case is one favorable for operation. Count the pulse and investigate the temperature of the skin. The chances will be that heat and stimulation are needed.

—The *Bolnitchnaia Gazette Botkina* tells of a peculiar "gastronomic" apparatus unearthed by the police in one of the Moscow restaurants. The machine is supplied with a large pipe into which all the remnants from the tables are thrown and by turning a crank converted into cutlets, pastry and other tempting dishes. There is evidently some ground for the popular notion that dogs are converted into sausages by the aid of special machines.

—According to the *Medical Record*, Dr. Besnier recently presented a report to the Paris Academy of Medicine regarding the increase of leprosy in France. The report stated that the disease was becoming so prevalent in various parts of the country that stringent measures were urgently needed for its suppression. In Savoy and Brittany there were several distinct endemic centers, and at the Hospital St. Louis, in Paris, fourteen lepers were then under treatment.

—The belief is very general that the cause of death of the great Napoleon was cancer, and it is generally believed that cancer was in the family. Dr. Baudouin has lately published in the *Gazette Médicale de Paris* some clinical remarks on the death of Napoleon, and the conclusion he arrives at, from a study of the symptoms and post-mortem appearances, is that the great emperor died from an ulcer of the stomach, which caused death by perforation. The whole controversy, observes the *Medival Press and Circular*, exemplifies the extreme difficulty of correcting a mistake of this kind.

ORIGINAL ARTICLES.

COMPATIBLE MEDICATION, OR THE PHYSICAL FORCES IN SCIENTIFIC FORMULATION.

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PART I.

IN my paper on Life and Its Association with Matter (the first of this series), I argued to prove that Life is a distinct entity having no relativity with matter, and only abiding with matter for a limited time; thus reasoning that the body is only the highest order of matter elevated to living association. The physician has to deal with matter only. To argue conclusively on this subject, it necessitates a theory of three ethers instead of one ether, which is, as acknowledged to-day, the basis of all sciences.

This paper is an argument along this line of the three ethers. If the theory is correct the results must be. It is easier to substantiate this line of argument than it is the old,—since the old ends as it began, in matter alone, neither proving nor disproving this unsolved mysterious problem. The fault lies in the theory of one ether, which does not answer as an aid to mechanical reasoning. Evolution seems to account for the production of species by differentiation, but does not account for the origin of life.

Before life first appeared it was necessary for so-called organic matter to appear first, and by this it will be seen, (as proved in my first paper), that matter does not live, nor is it necessary to live in order to manifest the phenomena of organization; consequently the foundation of a strict science of medicine must be based on this assumption.

As the eternal passivity of nature seems to be analogous to the process of organization, manifested in its power of transformation and reproduction, it almost persuades belief that all things in nature might possibly reproduce themselves. In order to explain vital phenomena it is not necessary for matter to live or possess anything in common with life, as the physical agencies of nature acting upon chemical bodies explain all the laws of the eternal passivity of nature and all those changes going on in all organized bodies. The reversible action of enzymes is wholly chemical, which proves that no vitality is required to preside over their action.

The human body is inorganic matter elevated to living association by the aid of chemical energy liberated by the potentialities, which are the molecular groupings of the second ether. The one ether recognized by physicists of the present day is the mucleus of the action of these potentialities.*

All solids, liquids and gases possess these potential agencies. Atomic activity is due to the disturbance of these potentialities since they are the directing influences for combination as noted in material changes. The relativity of the units in combination is the cause of electrical fixity, and their motion is due to unvarying inclination to combine, which is an explanation of the atomic activity in the first mixing of the elements for the production of compounds; and the mechanical power resultant was the equivalent of the work done in combining. Before mixing everything was elemental, and since law and order had not been established the product of mixing was chaos.

* Fully discussed in my first paper.

There are seventy-three chemical elements which are responsible for the formation of all the chemical compounds as we know them; the number of compounds outnumber infinitely the elements from which they are made. It is well known that it is impossible for any compound to yield an element not already in the compound, consequently unless a compound can yield an element, or any agency, not already in the compound, the combined efforts of the elements in the compound could never evolve vitality, which proves conclusively that something more is necessary, in addition to their progressive differentiation, to evolve or manifest the presence of vitality. It may be asked why it is that if so few elements are responsible for the production of the many different chemical compounds in nature, why is it not possible by progressive differentiation for these elements to evolve a peculiar compound that would manifest life? The reply to this is, that the physical agencies of nature never have been known to produce anything but a chemical differentiation, the culmination of which is still chemical only, and not vital. We can produce everything by chemical formulation which ministers to the condition required for vitality, and when we have this condition something more must be considered over which, so far, we have no control. A revision of this condition would have to be admitted if we conclude that oxygen, carbon, or any of the other elements, on entering the body differentiate themselves in order to evolve vitality and afterwards leave in the same state as they entered.

This conception is directly antagonistic to the monistic doctrine which some eminent physiologists are ingeniously reasoning will be accepted by all scientists as a basis of reasoning on the life mechanics. Descartes was the first to advocate it, stating that the physical world was only an idea, that beyond our own minds we could not go, and that what we see as matter is in reality only our own sensations, our own idea. Berkeley, Fichte, Schopenhauer, Haeckel and Bois-Raymond reason along this line. It is the distinguished naturalist, Bois-Raymond, who says, "When we come to understand the nature of matter and energy we will probably understand how matter may have sensations, desires and thoughts." Haeckel agrees that "life, mind and consciousness is the resultant concomitant of nerve changes or processes." There is no question but that plants do express sensations and desires; even the potato shows apparent intelligence when it seems to direct its sprouts towards the sunlight, but these innate forces can never manifest themselves when life ceases to be a controlling power, for it is life that reasons; matter without life never evinces consciousness, sensations, desires or thoughts, and until we can demonstrate that life and matter are distinct entities, there can be no other conclusions or escape from this materialistic doctrine, which is the child of the one ether theory.

Many of the great discoveries of science have come by thoughtful investigation of speculative theories. There should be no narrow specialism in science.

What is the cause of matter? What is the cause of life? The physiological scientists are reasoning that there is no Creator—that all happened and is happening,—that as we cannot conceive of a cause to produce all, that there cannot be a cause. As matter did not produce life—what did? Life is not matter but it is all pervading and abides with matter as long as matter is receptive. In the course of time the "tenement of clay" goes the way of all flesh—and the breath of life must pass onward, since it is not matter and has no relativity with matter. As we account for matter so must we account for life. Life cannot spring from matter, as it is

superior to it—neither does matter spring from life; they are separate entities; and any reasoner who considers otherwise arrives at the conclusion that all happens by chance, and all ends with death. The human mind under the one ether theory cannot be located. Matter hasn't the attribute of thought, and until physiologists recognize this fact they will grope in darkness and continue to tell us that death ends all, while acknowledging that the only reality is mind.

The physiologist, the chemist, the biologist and the necrologist must of necessity criticise any theory which conflicts with that which they have been taught to accept as a basis for their reasoning. If they are satisfied with the old system, well and good. The one explained in this series of papers opens up new and advanced lines of physiological reasoning and results,—and while, perhaps, not perfect in every detail, aids more in explaining natural phenomena than the old. In accepting something new, there is, of course, a great deal to be unlearned. There should be a reason for every theory, and this calls for unprejudiced investigation.

If the scientists who tell us that matter moves because another matter acts directly upon it, will tell us why it so acts, and explain their theory of gravitation we will listen more willingly to their assumption that the one ether theory, through development, will prove all sufficient. There is a reason for every cause; and so far the scientist can find no reason or cause of life; and he has come to the conclusion that, though death is an eternal sleep, life, which is the most prevalent thing that we know anything about and exists as a controlling power over matter, goes out as the flame from the spent candle.

The object of this series of papers is to aid in elevating the science of medicine to a strict science and to stimulate medical men to investigate on new lines of reasoning, also that formulation may be brought into line of body requirement, in order that our therapeutics may harmonize by chemical interchange with nature's laws of repair.

The results of my experimentation along this line of reasoning have proved so successful that if published at once would not be credited without the most careful tests by expert investigators.

This paper is on the potentialities of the physical forces, heat, light, electricity and magnetism in formulation, and aims to show that as the physical forces of matter control matter in its every form, such forces as are innate and harmoniously arranged in the matter required for body repair and normal chemical interchange should only be used in formulation. In other words, compatibles only should be used. This idea is being thought over by advanced chemical physiologists. I would ask that the reader ponder well over these pages, feeling sure I am leading him in the right direction, no matter what his prejudices may be, or how learned he may be, or how difficult it may be for him to unlearn that which he once looked upon as sound reasoning; forgetting not that medicine as practised to-day is only rational empiricism, not satisfactory and not curing disease. I shall endeavor to show that there is no disease, however grave, that should not show favorable results to scientific formulation.

As the physician's object is *to cure disease,* I say, to do so, he must *promote organization by reinstating those elements required in body formation*—the loss of which entails pathological changes.

We know what elements enter into body formation, and when foreign ingredients are used as remedies for disease none but unsatisfactory results can follow. Medicine as practised to-day shows on this ground a complete absence of system, in that the essential compounds required in the nutritive changes going on in disease are not considered in their relation to pathological change. For example: Nitrogen in the form of nitrogenized food is stopped in the treatment of Bright's disease, and nitrogen in the form of nitro-glycerine given. Nitrogen which is not used up in its normal function goes on in the blood and causes phosphate of urea, which is the cause of convulsions in Bright's disease. Incompatibles can never administer to the body's integrity. Promote organization by increasing the spermatic vigor of cells by the use of compounds containing potentialities essential for the presence of life in the body, thus preventing regressive changes. The potentialities pent up in the different elements originate that degree of complexity in matter necessary to the formation of all the animal compounds found in nature and the body of man. The potentialities mould the substance required in the animal economy and control its functionality.

Life being a continuous aggregate, unchangeable in its nature, must of necessity have the power, as expressed by mind, to solve any problem and to reason rightly on all subjects, no matter how profound, providing it has a proper nucleus for action, this nucleus being matter, expressed by brain substance. There is a limit to this, however, beyond which we cannot go as long as we are imprisoned in a material body. Life commences this imprisonment when the albuminoid unites with the crystalloid. The colloids in the form of proteids permeate the crystalline form, the structure or morphological figure being the result of the accretion of the mineral units that form any body or crystal, as distinct from the colloid, which is not, nor never can be made to crystallize in the absence of mineral matter. The crystalloid builds up the fabric of the body, again the colloid both institutes and continues the process of reproduction.

We must allow that life is everlasting and from its reality can have no end. The unreal or seen things preserve their identity but for a limited time; the unseen, the real, never change; they are the only realities and continuities in the universe. The question is, is matter subservient to life? Or is life subservient to matter? If life is subservient to matter then death does end all, and everything is a failure. If matter is subservient to life, then what appears as death is only a transition; thus immortality is proven.

The theory of Biogenesis that living things produce only living things is not a correct theory, for it is known that the hydrocarbon radicals of living proteid differ in no essential from the food proteid, save in the arrangement of the nitrogenous atoms. The proteids and their compounds are of the highest complexity of chemical composition; they are without exception the only substance found in every cell. The organic base for the development of the proteid molecule is the carbohydrate, which is developed synthetically by the aid of nitrogen and sulphur. Glycogen is derived from the transformation of proteid; so is lactic acid and other nitrogenous and excretory products.

When these conditions of transformation are more readily understood we shall be able to reason more clearly on the life mechanics.

The belief that life springs from matter is the barrier to progress in therapeutics; for this reason we have no specifics, though we ought to for we can have them just so soon as we formulate compatibles in harmony with nature's requirements, using the potentialities of the physical forces as therapeutic agents.

The medical profession has accepted the cell theory in explanation of the human organism and its evolution; the microscope has shown that cells form the fundamental constituents or structural elements of the body;

the same with the leaf, flower, fruit, bone, muscle, glands or skin. The human colony of cells is a complex microscopic organism of countless like units of different orders. The principal features of cells are the nucleus and protoplasm. Surrounding the nucleus is the protoplasm, consisting of carbon containing atoms of nitrogen, and is of an albuminous nature. The higher order of cells differs only in complexity of design and potentialities suitable for manifestations of a higher order of activities.

The centre or nucleus of cells contains the nucleolus or central point of action; the nucleus determines the individuality of the cells; it is the builder of the organism and possesses the power of breathing, feeling, motion, nutrition and reproduction. The methods of the functions are described in chemical physiology. Halliburton is authority for the statement that by the power of assimilation possessed by the cells, dead matter in the shape of beefsteak is elevated by chemical changes into protoplasm or living matter. This idea of "living matter" is prevalent and is the one thing that must be unlearned before taking the first step in scientific formulation. It is fully discussed in the first paper of this series. Virchow admits that there is no life in intercellular substances; he writes, "Life was ever alien to them."

The amœba and kindred one-celled organisms show the simple cell in independent form and the beginning of man. The many celled organism of man is a social community of individual cells, developed in various ways, which were once simple cells of common structure, differentiated by aid of the potential forces peculiar to them. The white blood corpuscle is an amœba retaining its primitive form in all adult higher animals.

The nuclein found in the cell nucleus is rich in carbon, hydrogen, nitrogen, sulphur, phosphorus and oxygen. To the physiologist the cell is an interesting study; the simpler its function the more difficult apparently is it to understand. Some cells are for special purposes, such as muscular contraction, reproduction, elaborating, secretion, etc., while others like the amœba, the simplest of all, the potentialities pent up in it give it its remarkable power of almost intelligence; in other words, the distinguishing characteristics of all cells are due wholly to the potentialities pent up in them, affording them the power to appropriate, select and defecate, which is called metabolism. As I said in my first paper, there is very little chemical difference between the vegetable cell and the animal cell, in its reference to chlorophyl. The action of light on the metabolism of cells is beautifully shown by its stimulus on chlorophyl to form starch and other non-nitrogenized substances. The stored energy of the cell is liberated as heat and motion, while in destructive metabolism there is liberated heat, motion and electricity.

Cellulose is the colorless material which composes the cell walls and woody fibre of plants. Woody fibre is a beautiful illustration of the fact that the physical differences of substances are due to the physical forces pent up in them. Woody fibre, gum and starch possess the same formula; so also do turpentine, oil of lemon, oil of bergamot and oil of pepper, which are composed of the same elements and in exactly the same proportions.

Cellulose is, however, not confined to vegetable tissue, being found in the organic tunicates as the animal cellulose with identical properties.

The various digestive ferments have little or no action on cellulose, which is the reason for the stomach not digesting itself, there being no acid in the gastric juice capable of dissolving the cellulose found in the muscular tissues of the stomach.

STERILITY IN WOMEN.*

BY LEWIS S. MCMURTRY, A.M., M.D., LOUISVILLE, KY.

THE percentage of married women between fifteen and forty-five years of age who are sterile is estimated by various observers to be between seven and twelve per cent. With increasing population, the vast growth of cities, accumulating wealth, the pursuit of fashion, and adoption of artificial modes of life, this percentage is very much increased in the present age.

The importance of this subject in its sociologic, domestic, and kindred general relations and bearings, while recognized, are beyond the scope of the present occasion. Likewise the consideration of congenital causes of sterility, or acquired defects in the reproductive organs, such as surgical removel of the uterus, ovaries, and Fallopian tubes, or permanent atrophy of these organs, is beyond the limits of this discourse.

Two necessary conditions must obtain for normal conception:

1. That the ovum and spermatozoa shall meet and fertilization occur. While this is believed to occur in the Fallopian tubes, it doubtless can obtain in any part of the tubo-uterine mucous tract.

2. That the fertilized ovum shall find a proper nidus in the endometrium. The endometrium is the placenta-forming organ, which is the great center of force in the growth and development of the ovum. The endometrium must shed its epithelial covering, and its retiform tissue must become filled with lymphoid cells, from which the decidua must arise.

The function of menstruation and the coincident changes in the endometrium find their objective point in the preparation of a suitable nidus for the development of the fertilized ovum.

Excluding general causes of arrested development, improper education and corpulence, the causes of sterility in women may be thus enumerated: (1) Vaginismus, (2) atresia of vagina, (3) stenosis of the os, usually accompanied by deformity of the cervix (anteflexion, conical cervix), (4) uterine displacements, (5) lacerations of cervix, (6) tumors, (7) inflammatory lesions of the peritoneum, ovaries, and tubo-uterine mucosa.

The two first causes above enumerated are obstacles to coition, can be readily detected by examination, and are amenable to well-known methods of treatment. Although stenosis of the os uteri and cervical canal is among the rarest causes of sterility, it is the assumed cause in almost every case which is presented to the physician for treatment. It is well known to every gynecologist that almost every case of sterility or delayed conception which comes under observation has previously undergone dilatation of the cervix for a fancied stenosis of that canal. The same criticism is applicable to the operation for sterility practised by Simpson and Sims of incision of the cervix. No operation is more misapplied, and in a large proportion of cases it is the initial step in the establishment of chronic inflammatory disease of the tubo-uterine mucous tract. This statement may be emphasized when applied to those cases of sterility attributed to cervical stenosis in which the stem is applied to maintain patency after dilatation.

Inflammatory diseases of the uterus, ovaries, Fallopian tubes, and pelvic peritoneum constitute the cause, in the great majority of cases, of sterility, and the pre-

* An Abstract.

vention and treatment of sterility is, for the most part, the prevention and control of infection of the tubo-uterine mucous tract.

The anatomical arrangement of the female genital organs makes it *a priori* probable that bacterial invasion plays a predominating rôle as a causative factor in all classes of inflammatory diseases.

Doderlein says: "Above any site in the body, the uterus seems to be the place favoring bacterial invasion and colonization. The open connection between the uterus, the vagina, and the outside world; the many chances for transport of germs which are so obvious, particularly during sexual life; stagnating secretions protected against desiccation and kept at a brood-oven temperature—all these factors unite to *a priori* impress us how well adapted the interior of the genitalia is for bacterial invasion and consequent disease."

Yet it has been found that in spite of all these apparently favorable factors the internal organs of the healthy woman are not easily reached by the pathogenic bacteria, and are, as a rule, sterile. The vulva, according to the unanimous verdict of all investigators, is frequently the seat of pathogenic bacteria, particularly the ubiquitous ordinary pyogenic micro-organisms. The vagina, however, in healthy women, contains pathogenic bacteria only in a small number of the cases examined under the proper precautionary measures to avoid contamination. It, on the other hand, in healthy women, always harbors a great many non-pathogenic bacteria. Yet fully virulent pathogenic microbes, introduced experimentally, as had been done by Köenig, Doderlein, and others, are speedily killed in the healthy vagina. Clinical and other experience has abundantly shown that the vagina possesses the power of self-purification, which may be speedily lost under certain conditions.

Adhesions, thickening and obstructive, so commonly resulting from inflammatory changes, may readily impede the passage of the ovum, while pathological secretions and inflammatory products may destroy its vitality. This cause of sterility is apparent in the large number of sterile women who have conceived once, and having been infected in connection with abortion, miscarriage, or labor, remain sterile in consequence of the changes resulting from inflammatory lesions.

Recurring to the researches and experiments of Doderlein, showing that under normal conditions the vagina has the power of self-purification through the power of its secretions, a practical means of preventing infection and consequent sterility is apparent. The modern idea that pervades the general professional mind, and adopted by the laity, that the frequent, often daily use, of the vaginal douche is a preventive of infection in healthy women is shown to be erroneous. The habitual daily use of the vaginal douche in health is productive of much mischief. The protection against infection established by nature is washed away; unskilled douching itself often carries infection to the cervical mucosa, whence it extends along the mucous surfaces. The vaginal douche, while a valuable agent in treating disease, is altogether misapplied as a routine part of the toilette or as a preventive of infection in healthy women. Many women are sterile in consequence of the inflammatory lesions begun in efforts to prevent conception early in their married life.

As a conclusion of this imperfect consideration of the subject, it may be stated that sterility may result from diseases involving any part of the genital system of organs, from the pelvic peritoneum to the vulva; that the most potent causes originate in the changes following inflammation. Hence, for the most part, the prevention and treatment of sterility in women is synonymous with the prevention and treatment of pelvic inflammation, one of the most elaborate chapters in gynecology.

DISCUSSION.

Dr. A. M. Cartledge: Sterility does not interest us as much now as formerly, because we are not called upon for its cure as frequently at present as in older times. We are only occasionally confronted by a woman who sincerely wishes to bear a child at the present day.

The fact of greatest interest to the gynecologist is that sterility is always a symptom, not a disease, and indicates that there is usually a lesion somewhere in the genital apparatus.

As I have previously remarked in discussions and lectures, for a man to scientifically address himself to the subject of sterility in women requires an appreciation of all the gyneological conditions we are called upon to treat, because practically all gynecological diseases may have sterility as one of the symptoms, although strange as it may seem, occasionally an enormous array of gynecological conditions may exist in the same patient and sterility not be a symptom. That makes the study of the subject of greater interest.

In the study of sterility in the female I am in the habit of considering the uterus as the "middle ground" that the sperm cell must ascend to this middle ground and the ovum must descend, and anything which will prevent descent of the ovum, or ascent of the sperm cell will cause sterility. The mechanical causes have undoubtedly been greatly exaggerated.

I have long since concluded that dilatation of the cervix rarely does good, that it is the least effective of all methods of treating sterility though it is the method most commonly employed. A cervical canal which will permit escape of the menstrual fluid is not a barrier, *per se*, to conception. I have observed one case where I thought a long conical cervix caused sterility, the sperm cell being placed at a disadvantage by being deposited in the upper portion of the vagina, far beyond the cervical opening, and thus could not gain entrance to the cervix. Aside from the so-called conical cervix, with a small os, I do not believe a conical cervix is a barrier to conception. I am satisfied that the majority of cases are amenable to treatment. They should be divided into (1) those beyond the pale of hope, and (2) those that promise something from treatment. Of the first class infantile uteri and complete stenosis of the tubes are among the most common. Rare constitutional and systemic conditions, which have lithemia as a basis, may sometimes be the cause of sterility. All the so-called mechanical and inflammatory effects I am satisfied will often be found very simple in character. I have had three cases of sterility which were caused by an endo-cervicitis with marked secretion of mucus, or a cervical mucous plug. In one case the woman had been sterile for five years; she was anxious to have a child, and the mucous plug spoken of was the only lesion found. Treatment directed to relief of this catarrhal condition was instituted, the glands in this situation were deeply incised and turned out, and nitrate of silver applied, resulting in a complete cure. I have never cured a case of sterility by dilatation of the cervix, because I believe that is not the cause, *per se*, that some other obstruction must exist.

Of great interest, aside from the mechanical causes of sterility, is the question of the destruction of the sperm cell by toxines developed during the existence

of certain inflammatory conditions in the genital tract; that this does occur in certain systemic taints, there is no room to doubt. That is to say, there are probably given off, during growth and multiplication of certain bacteria, toxines which immediately destroy the sperm cell, as in cases where there can be found no obstacle to ascent of the sperm cell, nor any mechanical difficulty in descent of the ovum; where union takes place, but fertility does not occur. Nevertheless it occasionally happens that a woman with quite a marked chronic endometritis will readily conceive, and a woman with a chronic, purulent endometritis, where pus is constantly discharging from the uterus, sometimes conceives.

After extensive laceration of the cervix which has healed, where the pavement epithelium lining the vaginal portion of the cervix has ulcerated and healed perfectly smooth, a woman is more likely to conceive than if no laceration of the cervix had occurred. Yet when there is a laceration with granulation tissue and a chronic infectious process going on, the lacerated cervix may possibly be the cause of persistent sterility.

It must be recognized that it would be rash to promise any woman that her sterility can be cured. It must be also recognized that multiple causes of sterility may exist, in the same individual, any or all of which may or may not be amenable to treatment. One or two of the conditions may be amenable to treatment, while others may persist despite all efforts. Certainly a careful physicial examination ought to detect any lesion, then if there be not an infantile uterus or an occluded tube, the case is hopeful.

In an investigation of this subject at one time I enumerated thirty-eight known causes of steri!ity—from chronic ovaritis, salpingitis, endometritis, down to the common one of slight infection about the cervix, endocervicitis, and on down to the vagina, probably a chronic infection, so that the sperm cell is killed at its first deposit. It must be remembered, however, that the sperm cell is possessed of considerable vitality, and only six or seven minutes are required from the time it is deposited in the vagina until it has entered the cervix; but it can be readily seen how there may be an infectious process within the vagina, that the toxines given off from such process may kill the sperm cell before it can gain entrance into the cervix.

There is one general condition, more or less theoretical, which is considered an obscure cause of sterility, where we have a slight endometritis, a little sanious discharge from the uterus which is normal in size, the cervix not occluded, where there is no misdirection of the cervix as a result of development of the uterus, the tubes are patulous, the woman menstruates normally, she may not come under the head of obese, yet conception does not take place. In such a case it is well to start out, if no other cause for the sterility can be found, upon the basis that there exists a deficiency in the woman's blood, probably lithemic in type, that the endometrial secretion is so altered as a result of this systemic condition that there is a toxine given off, and immediately there results death of the sperm cell or the ovum; and I believe that systemic treatment, change of climate, use of the various waters, etc., have led to a conception in some of these women when all methods of local treatment had failed.

Dr. A. M. Vance:—I would suggest that it might be well to examine the man in many of the cases of sterility in women; quite frequently in the man will be found the cause.

Dr. Wm. Bailey: The prevention of sterility, if I may use that expression, should be largely prophylactic, especially the preventing of such conditions as obtain in our present state of society, conditions involving no doubt the healthy integrity of the endometrium. I recognize that there must be sufficient patent condition of the tubes in order to bring the ovum down, and a living germ so that impregnation may take place. I agree with the essayist that sterility is largely due to an unhealthy condition of the endometrium.

I am glad to hear Doctor McMurtry declare himself against the indiscriminate use of the vaginal douche. This is now carried on to such an extent that even women in health are almost universally using the vaginal douche. Within less than three months I heard a conversation between a number of women in which one of them stated, to the horror of the others, that she had never taken a vaginal douche. They advised her to go to a doctor and he would send her home to have a vaginal douche for cleanliness if nothing else. While it may seem to be a *quassi* means of cleansing, I am thoroughly of the opinion that the dangers from infection by the methods and means used, the uncleanliness surgically of the ordinary douche apparatus, is such as to endanger the woman more than any condition for which it is used. I am growing more and more opposed to its use unless it is necessary by already infected conditions that must be combated. The faculty that the vagina has of guarding the portal at this important place is a happy circumstance, and for the most part should be left to itself. The cleanly women is one who takes care of herself externally, avoiding the introduction of germs as far as may be by cleanliness, but nature in my judgment can take care of the inside of the woman better than any means that we can adopt.

We can all recall cases where we think, if I may be allowed to introduce this point in obstetrics, great trouble has come from the usual habit of a vaginal douche after labor. I am at that point in my obstetric practise that I absolutely prohibit the vaginal douche being used unless I find conditions that warrant it for infection already set up. I believe a woman is safer without any douching than she is with it as the douche is ordinarily administered.

Dr. H. H. Grant: I do not feel disposed to discuss this matter as a gynecologist, because I have not given any special thought to it from that standpoint; but my views are a little different from those expressed by the essayist, and this is a matter which is more or less a question of general practise, one in which we are all interested to a certain extent and all of us have some occasion to express an opinion. We must accept the views of those men who have given the matter especial study and who are competent to advise us, or else we should think for ourselves.

It has seemed to me that not infrequently sterility is occasioned by a long cervix and displacement of the uterus which cause occlusion of the lumen of the cervix by displacement of the uterus itself. And that not infrequently menstruation will occur regularly and practically to a physiological degree through this displaced uterus and curved cervix after much pain has been experienced in the gradual straightening out of the tube. The menstrual fluid does not apparently escape freely for the first few hours of the beginning of the menstrual molimen, but after six or eight hours, during which time the uterus has been replaced and the curvation of the cervix has been more or less effaced by the efforts of nature to empty the uterus, then menstruation apparently goes on normally. In the interval between menstruation, however, the uterus gets back into position which is abnormal

for other people but normal for this uterus which practically occludes the cervix, and it has been my experience in three instances to have fertility succeed dilatation of the cervix by force in women who had, in one instance for several years, and in two other instances for a year each, been sterile. In each of these instances pregnancy succeeded the dilatation so promptly as to leave practically no doubt in my mind as to the fact that the dilatation had overcome the obstruction, and I reasoned with myself that the obstruction was of the nature that I have just endeavored to describe.

It has seemed to me when I have had occasion to speak of this subject that the chief causes of sterility are much as were suggested by Doctor Cartledge. I do not agree with him, however, in regard to the mucous plug causing obstruction and sterility. This plug is always present in the healthy cervix and offers no obstruction to the sperm. Obstruction, however, I think far more frequently the cause of sterility than anything else, with discharges which in themselves are of an acrid character and promptly destroy the vitality of the sperm cell. In addition to this, of course, is the further fact that the epithelium of the mucous membrane of the uterus is practically in many instances incompetent to retain the ovum even after it has become fertilized; or even in the tube itself there may be some obstruction which arrests the ovum out of reach of the spermatozoa. These I think are far more frequent causes of sterility than ordinarily believed, but the character of obstruction to which I have called attention is not an infrequent factor.

With respect to the vaginal douche: I have also entertained opinions about this which are different from those expressed by the essayist. They are based chiefly upon the fact that in women who are married, or in women unmarried in whom sexual intercourse is frequent, there is constantly introduced into the vagina an organ which is not sterile and exciting a secretion which practically is not a normal one, at least in the virgin, and perhaps in the original intentions of nature is not a normal one. We are all familiar with the fact that in every animal aside from the human being sexual intercourse was apparently intended by nature only for the purpose of procreation, but in the human being it is indulged in frequently by those who have license even without the object of pregnancy, and oftentimes persistently after pregnancy has occurred. As this is the case then it appears that the condition found in the vaginal tract in other animal life is not the same as found in the human being. Most of us are aware of the fact that in those individuals who frequently indulge in sexual intercourse there is increased secretion of the glands in the male as well as in the female, and that only frequent ablution will enable those individuals to preserve a condition of absolute cleanliness of these parts. While it is probably true that in the virgin there is no need for the use of a vaginal douche, where no disease exists, in the female who is the frequent subject of sexual intercourse I am satisfied there is an unnatural discharge and there is an additional difficulty of cleanliness which can be preserved by the careful use of a clean vaginal douche. The position taken by Doctor Bailey is one I fully approve; but the conditions are different here, the uterus is dilated, the cervix oftentimes large enough to admit a little finger, and not only is the fluid itself thrown in by the syringe enabled to affect an entrance into the uterus, but even the tube may find its way through the cervix, and here is a source of infection as has been stated. But in the unimpregnated female the condition is different. The cervical tract is closed under ordinary conditions by a plug of mucus and it is exceedingly difficult to get the fluid to penetrate it, and it is only by the incessant involuntary movements of the spermatozoa that they ascend into the cervix through this mucous plug. It is not necessary, however, that this plug should be removed to result in pregnancy, the spermatozoa may ascend by the side of it or even penetrate it. Their movements are not directed by any power on part of the germ itself, but are involuntary and constant, and the life of the spermatozoa are sufficiently prolonged to allow them to gain entrance to the uterine cavity. For this reason I am satisfied it is not easy to throw into the uterus any fluid that might be used in a syringe or to wash into it any poisonous secretions that might be found about the vaginal walls.

With these exceptions I am fully in accord with everything the essayist has said as to the character of the trouble, and I only regret that it does not appear from his description or from that given by Doctor Cartledge that we may hope for a great deal in the cure of these conditions.

Dr. F. C. Wilson:—One of the causes of sterility not mentioned particularly by the essayist is the frequent efforts on the part of the newly married couples to prevent conception, the use of douches of various kinds, in order to prevent too early conception, as they term it. This too often results in sterility, in fact I believe it is one of the prime causes. Of course this leads to inflammatory conditions and the various changes take place as mentioned by the essayist, and the practise ought to be condemned. When people of this class want children they find they are unable to get them. Where a narrowed condition of the cervix can be detected by examination, sterility may be overcome by dilatation if that be the cause. That may not be the cause, but where a woman suffers greatly from dysmenorrhea and at the same time is sterile, a careful examination may detect a narrow cervical canal, or a flexed uterus, and I believe dilatation to a moderate extent which would hardly amount to a surgical procedure, but of course ought to be done aseptically, will frequently overcome the difficulty and relieve the sterility. I have had cases of this kind where after the measures suggested were carried out conception promptly occurred which was proof positive that the sterility had been relieved, and at the same time the dysmenorrhea completely disappeared. If there is a constricted cervical canal and conception occurs, nature does the rest in a much more perfect way than the surgeon can.

Dr. Louis Frank:—I fully agree with everything the essayist has said. The main point in the paper, a point that the essayist has thoroughly established, is recognized by all authorities to-day, viz.: that sterility does not exist as a disease, *per se*, or as a functional disorder, but is really due to some diseased condition, some pathological condition of the genital organs of the woman. I recognize, however, as I know he does, the fact that these lesions may be so slight in character, may be so obscure, so situated along the genital tract, about the ovaries, for instance, as would follow an old gonorrhea, a pyosalpinx which may have subsided leaving a condition wrich results in sterility though we cannot make out the cause by examination of the patient during her life. It is in many of these cases, for instance, where, without any demonstrable cause, sterility has extended over a long period of years in women who have been married fifteen or twenty years, without any efforts at the prevention of conception, without any history of any mechanical

lesion or pathological condition about the genital organs. Some of these cases have become at the end of that time pregnant and borne children. In these cases if we could carefully examine, pathologically, the ovaries and tubes, we would find evidence of pre-existing disease.

I am perfectly in accord with what Doctors McMurtry, Cartledge and Bailey have said in regard to the vaginal douche, and I certainly do not agree with Doctor Grant in this respect, nor in respect to displacements of the uterus, *per se*, producing sterility. These displacements may produce sterility secondarily by bringing about and maintaining a diseased condition of the uterus itself. There may be a secondary infection the result of catarrhal conditions, which we improperly term endometritis, not inflammatory in character, but which will prevent conception. These conditions do not necessarily prevent ovulation, but they do prevent the transplantation of the ovum on the endometrium and the development of the pregnancy. That there may be stenosis of the cervical canal to such a degree as to permit of the outflow of the menstrual fluid and prevent the entrance of the spermatozoa I cannot conceive. We must remember that pregnancy sometimes takes place notwithstanding the presence of large tumors pressing upon the cervix and almost obliterating its canal; that ectopic gestation occurs in a tube where constriction is sufficient to prevent escape of the ovum into the uterus, still this does not prevent entrance of the spermatozoa into the tube.

In the cases mentioned by Doctor Wilson dilatation of the cervix was probably beneficial by producing alteration in circulation and thus improving the condition of the endometrium and permitting successful implantation of the impregnated ovum. In many women, and these would come under the same class mentioned by Doctor Wilson, the newly married, we have another element to consider, which is also true in the case of prostitutes, those who indulge in frequent sexual intercourse, namely, a congestion of the genital organs frequently repeated which brings about a condition just as brought about by the cold douche, the uterus is chronically enlarged and congested, with alteration in circulation sufficient to prevent successful implantation of the impregnated ovum. I believe that frequently a lacerated perineum will bring about the same condition, although this was not touched upon by the essayist. We also have to consider the open, flaccid vagina which permits the easy emptying of the seminal fluid and spermatozoa, thus acting as a factor in the production of sterility.

I hardly agree with Doctor Cartlege that the mucous plug in the cervix would be an active factor in the production of sterility. It seems to me the spermatozoa possess sufficient vitality and motion to penetrate or pass alongside of this mucous plug and find their way into the cervix; and where mucous plugs have apparently been the cause of sterility I believe the condition was actually due to hyperacidity or alkalinity of the secretions which prevented the life of the spermatozoa being maintained sufficiently long to permit them to come in contact with the ovum to be fructified.

—Dr. Springer, of Paris, has a method to make one grow tall. This is to apply static and faradic electricity to the knee-joints daily, in connection with massage, night and morning. He binds the joints in compresses saturated with salt water, each evening, and puts his patient upon a diet of cereals to promote the growth of cartilage.

THE NATURE OF CONTINUED FEVERS.

BY M. HEINEBERG, M.D., PHILADELPHIA.

UNTIL 1830, little distinction was noticed in continued fevers, cases lay undiagnosed in the hospitals, the symptoms seemed to be the same, the mortality looked equal in most cases. The variations being explained according to the prevalence of the disease. Even to-day it is well known that we cannot draw sharp lines of distinction in the vast majority of continued fevers. This is possible only when the process has advanced enough to form the types—for illustration, the enteric lesion on the one hand with the bacillus, which means "typhoid," and the putrid blood condition with exanthematous skin on the other—which means "typhus."

For example, in the so-called "Blackwater fever," which Koch studied in 1899 in German East Africa. In only two of these cases could he find the malarial parasite, and yet this disease has been called "malaria" for many years. He found no other organisms in these patients. He found in these cases that quinine, usually a specific, was more than useless. These are his own words on this subject: "Although I have met with no cases of black-water fever in which quinine poisoning is excluded, yet I should hesitate to go so far as to assert that every case of blackwater fever is a quinine intoxication; but that quinine intoxication plays a very important rôle in the etiology of blackwater fever is, as a result of my investigations, no longer to be denied. One must, in the future decide before everything else in cases of blackwater fever, whether it is or is not a quinine intoxication, and if this is to be positively shut out, whether other substances introduced into the body in some way or other, in food or drink, may not have an action similar to quinine. It is, however, readily conceivable that a man in whom this remarkable idiosyncrasy against quinine has developed might react with hemoglobinuria toward other substances up to his time he has borne without ill effect.

"Only when such possibilities have been entirely shut out is it reasonable to investigate the remaining, possibly very small, number of cases of blackwater fever with regard to other etiological possibilities—moreover, it will also be very important to settle the question as to how the idiosyncrasy towards quinine arises in the tropics and whether it is not possible to remove it when present. It is probable, however, that this condition depends upon some appreciable changes in the constitution of the blood. In this connection it is certainly not an accident that blackwater fever occurs almost only in men; women and natives are only exceptionally affected by it. If, however, it should be impossible to solve this riddle, this much is positive that the treatment in blackwater fever with quinine must absolutely cease and that in patients with malaria who already have had an attack of blackwater fever quinine should be given with the greatest care, or rather should be replaced by other means."

The literature of continued fever is rather disappointing because of the unsatisfactory records of the examination of the blood.

There is one phenomenon common to all forms of continued fevers. It is an apparent blood change, ending in severe cases in disorganization, with deposition of dissolved hematin, the cell protoplasm losing cohesibility as a rule—the proteids of the blood tissue being under the disintegrating influence of new substances circulating in that fluid—which are derived from illy formed leucomaines and enzymes. Typhus exanthematicus, is now taught to be in contradistinction to typhus abdominalis, an "acute, infectious fever, characterized by sudden on-

set, a dark-red eruption, marked and peculiar nervous symptoms, and a termination usually by crisis at the end of the second week," while typhoid or enteric fever, as the English call it, is an "infectious fever, characterized anatomically by hyperplasia and ulceration of the lymph follicles of the intestines, parenchymatous changes in other organs, notably the spleen, and that contagion is not a marked feature." For twenty years now to this description is added the existence of the Eberth bacillus. The eruption is rose-colored; there is probably diarrhea, abdominal tenderness, tympanities, splenic enlargement, and much importance is placed on the typical thermal curves.

The profession knows well that every one of these symptoms is extremely inconstant—even the fever may be missing in certain cases; in fact, the somewhat cynical expression is heard that "there may be typhoid without symptoms." There is now a distinct impetus in the profession to believe what was for years derided: that there are other forms of continued fever undiagnosed and undetected. Still, concerning these other forms of continued fevers, excepting relapsing fever, which may occur at all times, with all ages and sexes, and often in connection with prevalent typhus and typhoid, before, during, or following their usual outbreaks, the subject is still little known. These fevers are often characterless, and, occurring in exceptional regions, gain admittance nowhere else. Yet the diseases present excessive pyrexia at times, and some cases have serious prognoses.

Again in other classes of cases other problems are observed. The threatening heart failure, which occurs frequently in fatal cases, is the dangerous symptom. Post-mortem section usually reveals unusually fluid darkish blod and a peculiar granular change in the substance of the heart muscle. There were no skin eruptions, enteric involvement, or marked nervous phenomena. Such instances of continued fever are not at all uncommon among sailors in temperate climes, and cannot be passed over as being gastric or irritative fevers, or as referrable to conditions not diagnosticated. They are not always benignant, and they unerringly indicate an unhygienic environment. Some authorities believe many cases originate from poisons in excremental matters, "resulting in new bio-chemical products, from necrotic change set up in the epithelial elements lining the digestive tube and the respiratory tracts; the work of a class of saprophytes introduced in unusual numbers from without, upon or within our various supplies—air, food, water, etc. The same causes, long continued, combined with misery and famine—which diminish immunity and resistance—specialize the types by added and increased virulence of the microphytic element."

Typhus exists without eruption, cases of typhoid without follicular enteritis. There is the other side of the question—eighty synonyms—for "typhic" or typhus fevers in the various parts of the world have been shown to be the same disease by Pringle and Fordyce; but when the diseases become devastating and depopulating, whether in military forces or in civil populations; on their decline we always find a large class of benignant unclassifiable cases. Simple continued fever has been a term for those anomalous cases concerning which a diagnosis cannot be given—which as yet show no specific characteristics.

In his great classification of typhus and typhoid fevers, Dr. Murchison omits 200 cases that could not be classified as either typhus or enteric cases. Wunderlich and Murchison both explain these anomalous fevers to combinations of the poisons of typhus and typhoid, in which the characters of each do not remain distinctive.

Barr, the Scotch physician, objected to the term "enteric fever," as by it the lesion of the bowel is raised to the dignity of the disease, instead of remaining, as it undoubtedly is, the effects of the disease—an irritative chemical effect. These lesions are pathognomonic, but like other prominent lesions and complications are due to the specific bacilli and their products. In the majority of cases of the disease the intestinal symptoms are not more prominent than the respiratory and nervous symptoms. Again, Whitelegge reports: "Occasionally in crowded manufacturing towns and villages we meet with typhus fever outbreak, which we cannot suppose to have arisen de novo, but which seem to have had their beginnings in cases of illness which, apart from subsequent history of typhus fever, would have received no name more definite than febricula or simple continued fever."

The so-called Malta fever which was exhaustively reported on during our Spanish war with the description of cases in our troops comes from Mediterranean latitudes, yet in the tropics everywhere, these anomalous, sometimes typically "typhic" fevers, are found at all times. They are christened with various names, generally from some local habitat or predominant symptom. They may be complicated by being combined with bilious, and gastric disorders. It is the anomalous fevers of such tropical and semi-tropical regions as India that Murchison's doctrine, "pythogenetic fever," or "fever of putrescence," is more clearly applicable, and it is in these regions more extended methods of investigation are necessary. The utmost importance is now placed on these diseases, for colonization is going on rapidly, and the bulk of tropical and sub-tropical fevers are of this anomalous sort." This is natural for putrefactive and saprophytic organisms are common in those regions of the globe, due to the constant heat and moisture amidst, generally, degraded people with foul habits of sanitation.

"Malta fever" and "Rock" or "Gibraltar fever," have all been investigated by English army surgeons, while American army surgeons have examined Rio Grande and mountain fever. These observers have had more opportunity to go farther in their studies than any others who have labored in the same field, and their results are briefly as follows: "The pyrexial condition is often chronic, lasting as long as four or six months, but with distinct remissions, not like intermittent. The temperature curves come in waves. Quinine and arsenic have no effect. There is obstinate constipation, progressive anemia and debility, followed by neuralgic and rheumatic disturbances lasting for years. The death rate is low, but the time lost and the invaliding in the English services are enormous. The fever may be endemic and epidemic in character. Pathologically, the spleen is at first enlarged; the mucous linings of the alimentary tract are subject to irregular patches of congestion, not related to Peyer's patches. The mesenteric glands are enlarged, but less so than in pure enteric cases, and there is no malarial pigmentation."

It is interesting to note that from the spleens of fifteen fatal cases, a special micro-organism has been obtained, which Dr. Louis Hughes, has carried the organism through six generations of pure cultivations, but these observations as yet are not conclusively accepted. Pure cultures have been introduced four times into the forearms of healthy monkeys under the strictest precautions. "Although no local changes took place, still the animals developed a similar fever. Two were killed in the third week, having a temperature of 106 degrees and 107 degrees F., and from each pure cultivations of the same organism were obtained from the spleen and liver, and in two from the spleen and blood. Enlarged spleens and

irregular congested patches in the intestines were found in the bodies of the monkeys. Peyer's patches were normal. The organism was also carried from the spleen of one monkey to a well animal again inducing the same fever, lasting over two months. Thus, the three observers, agreeing essentially in most points, have placed the etiology of certain Mediterranean fevers on sound basis. The organism believed to be the proximate cause of these fevers grows best in an alkaline nutrient medium, with an alkalinity not in excess of the blood. After inoculation from fresh human spleen the colonies will appear in five or six days as minute transparent, colorless drops on the surface, gradually becoming opaque. With transmitted light and low power they appear round, with granular edges, have an orange tinge, and without liquefaction. The colonies retain vitality for over two months."

These Mediterranean, Danubian, and Red Sea fevers are at present put down as due to collections of fecal and organic matters, with infection commonly believed to be conveyed by means of the atmosphere, and not so much by food and drink. Here we see again that combination of a "porous soil, human excrement, and a varying level of subsoil water." Pasquale has cleared the Italian Red Sea littoral of the current ideas as to malarial infection. He states "there is no fever infection, sui generic, such as climatic remittent, which some classifiers have called it. There are febrile maladies which might be confounded with common continued fevers, such as those arising from typhoid infection, principally of the so-called abortive and minor types." Milnes gives the following conclusions as to Mediterranean fevers, as follows:

"These fevers are neither typical of typhoid or malarial fevers as commonly understood, yet they at times present symptoms of both in the character of the remissions of pyrexia, the congestions of the alimentary canal and the splenic enlargement and the tendency to pulmonary congestions. Invasion is marked by loss of appetite, headache, backache, but seldom by rigors or vomiting. The rise of temperature may be gradual or sudden, oftenest reaching its highest point within the first four days. There may be a slight pulmonary or pleuritic congestion, slight jaundice may be present in a few cases; rheumatic symptoms are late manifestations; and, on the whole, the disease has no pathognomonic symptoms, excepting the tongue, which he considers typical. This organ is covered with a dead white, moist fur, persisting throughout the attack, and with its disappearance recovery has commenced. The bowels are constipated, and the abdominal symptoms are not very prominent. Enlargement of the spleen may or may not occur. The main features of the disease, if recovery does not take place within the first fortnight are progressive debility and emaciation, and irregular temperature without rigors. Recovery is hastened only by transfer to cooler regions. The rarely occurring eruption is not exactly like the rose spots of typhoid. It is a disease of old, thickly settled towns and garrisons in warm regions, and does not exist on open plains or in marshy regions. It is best treated with fluid diet, recumbency, early moderate calomel and saline purgation, and by hydrotherapy."

Also have the English military and naval surgeons stationed in Egypt reported that "there are many fever cases of twenty-one days' and longer duration, with no distinguishing characteristics, with thermal ranges common to true typhoid or enteric fever, but with no diarrhea, enlarged spleen, or skin eruption. Annually there occur in Egypt mild epidemics of typhus exanthematicus, following the season wherein the poorer natives huddle together in squalor and filth in crowded tents for warmth. The Mediterranean and Red Sea fevers have few distinctive characters, clinical symptoms, and negative lesions only, and according to some observers a specific organism is found in association in cases widely separated in Malta and Gibraltar thus far, and which answers the requirements and postulates of Koch. We must expect that studies on the chemical products of the organism which are more difficult to investigate will give definite information as to the origin and pathology of these conditions.

Liebermeister believes that the diseases produced by the typhoidal poisons differ greatly. Some may be so serious that life is almost inevitably destroyed; while others are so trifling that patient and physician are in doubt whether actual disease exists. Grading between these extremes, lighter cases are often diagnosed as a "febrile abdominal catarrh," "gastric fever," etc. It was thought that with the discovery of the Eberth bacillus that a great practical advance in the solution of typhoid etiology and in its management would be assured us. But as yet knowing much of the biology, and the chemical products of that organism, it has not been definitely proved that the bacillus has produced typhoid fever experimentally upon animals. It is difficult to find the organism even in the excreta of enteric cases, far more so in contaminated milk or water.

Tépine and Tyonnet have studied the effect upon dogs of injections of typhoid "toxin," with the following conclusions:

1. There are rather marked individual differences in dogs in relation to their resistance to the action of typhoid toxin. The fatal dose by kilogram varies from a minimum to four to five times that amount.

2. Removal of the spleen, if it be done immediately before injection of the toxin, appears to exercise no appreciable influence.

3. If this organ be artificially heated, a proceeding which increases its vitality, one may bring about the survival of dogs intoxicated by a dose of the toxin which would otherwise be surely fatal.

4. Generally, when new dogs succumb rapidly to an injection of toxin, their temperature becomes very little elevated, or even falls; on the contrary, if they resist, there is a rapid and often considerable elevation of temperature.

5. With regard to the leucocytes, it may be said that if the dog succumb rapidly to infection with typhoid toxin, his colorless corpuscles undergo a marked diminution; on the contrary, if he succumb slowly, his leucocytes do not diminish at all, but increase slightly; if he resist they increase either a few hours after the injection or on the following day.

Seigfried noticed years ago, when serving on a vessel of the U. S. Navy, the following conditions and consequences: "A wooden corvette had been for eight months out of use, lying in a fresh-water stream. In the summer months a large number of mechanics were employed upon her, making extensive repairs. In the month of November she was put in commission, and about 300 men were suddenly put on board in raw, inclement November weather. The ship was not clean, the men were not of the best material, and in much confusion they took up their abode in an unclean, steam-heated and (in parts) damp ship. It required many days of scrubbing to clean up the decks and dark corners, and all this time overcrowding, moisture, lack of sufficient ventilation, and somewhat irregular discipline and confusion among the crew reigned. Within three weeks there occurred

six cases of continued fever, with macular eruptions, mousy odor, meningeal congestion and inflammation, mucous hemorrhages, and with a mortality of 33 per cent. The cases were not typical typhoid or typhus, and somewhat resembled cerebrospinal meningitis. From a cold northern port the ship proceeded to a warmer southern port, where, during January, 1873, within ten weeks of the reception of her company, there were sent to hospital twenty-two cases of irregular fevers and rheumatism, including six cases of typical enteric fever, with a mortality of 23 per cent. With the lapse of time and improved hygiene, and an outside temperature allowing of free ventilation, all irregular fevers declined, pneumonia ceased to become typhoidal, and the simple continued and ephemeral fevers ceased altogether by the following summer. The cases followed upon the evolution and multiplication of ordinary saprophytic organisms becoming pathogenetic from moistened, heated, filthy decks in a confined atmosphere. I found developed under my eyes irregular, low, and continued fevers, with petechiæ, nosebleed, stupor, meningeal and lung involvement, and the enteric lesion among the symptoms of certain proportion of cases; and, along with these, a number of mixed and milder continued and negative fevers, hovering like a nimbus over the others better characterized."

Seigfried frequently found seamen to become ill with these irregular filth fevers, from among the crews of boats which, owing to the nature of their duties, were much delayed at city wharves near sewer exits, and only rarely were these cases typical of enteric fever. He had two fatal cases of continued fevers of a negative character, and found at the end only a granular heart muscle and an excessively dark fluid blood; one dying on the sixteenth and the other on the eighteenth day and by heart paralysis. In the course of these observations he found less fever the cleaner, dryer, and lighter the ship; in other words, no continued fevers in the absence of putrescence and its teeming micro-organisms. Ships' crews consume as a rule only distilled water; all food, if anything is overcooked, and all drains go directly overboard. In the instances above cited the disease processes originated by the medium of the air by acting on the blood in the lungs, and on the intestinal linings by means of the food supplies in contact with such air. He noticed that with change in quality of respirable air come disorders and change in the physiological capacities of the lung chemistry (the exchange chemistry of the red cells when blood is exposed in the air cells), with sequence of disordered metabolism in the cells of the tissues in detail, ending in formation of new products and compounds derived from proteid molecules (ptomaines and leucomaines). This is followed by the setting up of new phenomena in vital activities (excess or loss) of function, excitability, irritability, degeneration or necrosis, the prominent phenomena being excessive metabolism and disordered heat-regulating function—"fever." Blood being a living tissue, its cells and formed elements ever changing themselves, and performing varied and complex processes throughout the whole body, is the first constituent to undergo change when exposed to the evil influences of excremental emanations, or equally so when exposed to the same elements dissolved in water and milk so polluted—originally human excretal deposits—confirmatory of this view are the recent exact and accurate records of Roux and Vaughan, the former, the Lyons cases of typhoid, from the use of a drinking water containing the common colon bacillus, and the latter the series of cases from the use of a lake water, fecal polluted, and markedly contaminated with "toxicogenic" organisms.

Vaughan believes that the intestinal poisons, some with an affinity for the central nervous apparatus, are due to the bacteria present, and the typhoid state may be charged to the mixed infection following their absorption. Some leucomaines of themselves and other converted by bacteria into definite toxic bodies, when sprinkled upon exposed areas of the brain periphery excite convulsions. Maclagan's "metabolic theory" is as follows: Two main processes are constantly going on in the system, constructive and destructive metabolism. During tissue disintegration various products destined for elimination are formed, urea, CO, and heat. Urea is eliminated chiefly by the kidneys, CO by the lungs, and heat by the skin. In the case of each, production and elimination are so well balanced that no accumulation takes place in the system. In the case of heat this balance is so well maintained that the normal temperature is always the same (98.4 degrees F.). The various processes are presided over by the nerve centers, and it is by the regulating power of these centers that the normal balance is maintained. In fever this whole process is disturbed, there is increased formation of urea and CO, and the emperature rises above 98.4 degrees. The thermal apparatus, according to Maclagan, is composed of: (1) The tissues, particularly the muscles, in which heat is formed. (2) The surface, from which heat is eliminated, skin 80 per cent., lungs 20 per cent. (3) A central controlling power in the nervous centers. (4) Nerves connecting this with the heat-forming parts of the body. (5) Nerves connecting heat centers with the heat-eliminating surface.

According to Macalister's neurotic theory of fever, the thermal-nervous system consists of three parts: (1) The heat-adjusting mechanism, neurotic cells, "thermotaxis;" (2) the heat-producing mechanism, "thermogenesis;" (3) the heat-discharging mechanism, "thermolysis." Disorder of the first produces irregularity in temperature range; of the second, heightened temperature; and disorder of the first, second, and third produces steadily rising temperature. These three centers are only found in the highest developed animal life, as cold-blooded animals possess a thermolytic mechanism—a nervous mechanism controlling the vessels and breathing only—the thermogenetic system is developed before the thermotaxic in mammals.

There is wasting of nitrogenous tissues, with increased consumption of water, increased elimination of urea, increased rapidty of circulation, and preternatural heat in fever. The presence in the blood of vast masses of living organisms, with their changing structural protoplasm and new chemical products, would seem to account for these phenomena of fever. Micro-organisms reproduce and multiply in vast numbers, and consume a large quantity of nitrogen and water. Voit had distinguished between the fixed or organ albumen, which enters into the composition of the solid tissues and changes slowly, and the circulating, or store albumen, which is contained in the blood and fluids of organs, and very rapidly undergoes change.

This "store albumen" contains two parts—a constructive part, destined for the nutrition and building up of the tissues, and a retrogressive part derived from tissue waste and destined for excretion. The former is converted into solid nitrogenous tissue; the latter into urea in the urea-forming glands, and as a source whence the "contagium vivum" would by preference naturally take its nitrogen, and so the tissues are starved in fever. This contagium requires for its growth a large consumption of water, which comes from the tissues; the water ingested by the patient is appropriated by the multiplying micro-organisms. This causes the dry skin, the

parched mucous membranes, the inordinate thirst, the loss of appetite, the scarcity of urine, and the constipation.

The administration of water greatly increases the interstitial metamorphosis of tissue; decomposed tissue is excreted partly in the urine and partly in feces. Pfluger's views opposes Voit's. According to this authority the proteid matter of the cell itself, "the organ albumen," undergoes decomposition the more readily. Recently Schondorff has demonstrated that the rate of decomposition of proteid matter in the tissue depends upon the nutritive condition of the cells. While the "organ albumen" may play the leading part in normal nutrition, the store albumen would seem to be still the most vulnerable and apparent pabulum for the suddenly acquired micro-organisms. Dr. H. C. Wood, quoting the above, adds, "that while we cannot by water produce tissue disintegration, we can by it wash out the retained products of tissue change."

The treatment of continued fevers, based upon scientific principles, should become more successful as our knowledge of pathology increases.

LIPOMA OF THIGH WITH BEGINNING SARCOMATOUS METAMORPHOSIS.

BY H. O. SOMMER, M.D., WASHINGTON, D. C.

THE depicted tumor was removed by Dr. Fralick and myself, in Dr. Thompson's service, Metropolitan Hospital; the patient, a right-sided hemi-para-plegiac, stood even the general anesthetic well, however, and without any bad effects later, and the tumor was easily removed by an elliptical excision of the superfluous skin. The lipoma, which was at what Gosch

claims is the second place of predilection, was diffuse and not even partially encapsulated. The dark, elliptical eminence in the middle of the growth showed macroscopically what was probably a sarcomatous metamorphosis in its incipiency, being reddish-blue, indurated and beginning to encroach upon the typical lipomatous portion.

PUERPERAL ECLAMPSIA AND SEPTICEMIA WITH REPORT OF CASES.

BY J. B. MOONEY, M.D., SCOOBA, MISS.

IN presenting to you a paper on the above named diseases, I do not hope to add anything to the literature of our late text-books and periodicals, but as the mortality is so high, I hope to stimulate you to a free discussion of the subject, thereby devising a treatment or management, of our parturient patients that puerperal eclampsia may be rare or even unheard of.

In defining puerperal eclampsia will class it as a convulsive action in a woman during the pregnant state, even unto completion of involution. Occurs more frequently in the primipara and twi-pregnancies than other labors. Puerperal eclampsia occurs one case in every three hundred cases of the pregnant American woman.

In a case reported by a medical friend of mine the eclampsia occurred five days after delivery, and upon a thorough investigation of the cause a small portion of placenta was found in utero; same was removed with curette with no return of convulsions. In my own practise one case occurred soon after labor was completed. Some of the older writers defined it as convulsive occurring during the latter half of gestation; I have seen a few cases occurring as early as the second or third month of pregnancy; however, I repeat, that we may class it as an eclampsia of the pregnant woman occurring at any time from conception until the completion of the period of involution.

When we study the etiology of puerperal eclampsia we find almost all of the modern researches attribute it to an accumulation of a toxic material in the blood from defective renal elimination.

Dr. Samuel Merriman, Professor of Mid-wifery to the Middlesex Hospital of Philadelphia in 1814, gave as the three accepted causes the following list 1st. General irritability of the constitution. 2. Irritability of the uterus from destructive lesions. 3. From an overloaded state of the system.

Dr. Ewell in 1825, gave as an opinion as a result of considerable study that "it was caused by too much blood circulating in the system," giving as his reason, the more frequent occurrence in the corpulent woman and after thorough blood-letting they very frequently were relieved. While that is true in a great many cases or instances we find it in the anemic patients as well. The convulsions have been attributed to uremia, hydremia, ammoniemia and to some kind of micro-organism circulating in the blood, from defective elimination from some of the following causes affecting the kidneys: Dilating, stretching and inflammation of the uretus caused by gravid uterus pressing on them in its ascent from the pelvic cavity. Sudden hyperemia of the kidney from cold suppressing skin elimination; increased functional activity of the kidney required during pregnancy to eliminate waste products of the fetus; increased blood pressure from physiological hypertrophy of the left ventrical incident to pregnancy; mechanical pressure of the blood vessels by the gravid uterus, or vasomotor constriction of the renal vessels from irritation applied to the nervous system by changes in the uterus from pregnancy, thereby disturbing renal circulation. From the autopsies made by Lohlein and others the uterus was found dilated, stretched and inflamed. The above named products have been found in the blood of eclamptic patients, but to what extent they are at fault in the eclamptic state we are notable to say. Dr. Lever was the first to report

albumen in the urine of the eclamptic woman, in 1842, in his report at Guy's Hospital on that subject, and ever since his reports that has been the more accepted etiological factors of the disease, although Dr. Seyfort and others have reported quite a number of parturient women whose urine was loaded with albumen and had no convulsions, and again they reported seventy cases of Bright's disease in which cases of pregnancy occurred with only two cases of convulsions.

I am willing to admit that auto-intoxication is the correct etiological element of puerperal eclampsia; but to put the whole blame on the kidneys I do not agree. I can readily understand how a woman with constipation, defective liver action, with perhaps a history of indulgence in indigestible foods and perhaps an evening of mental strain incident to entertaining a few lady friends, or perhaps to have had at her home a "sewing bee," or "ladies aid," and after a thorough discussion of the topics of the day, allusions to the best methods of managing the financial conditions of the church societies, and how the preacher's wife should dress (?), etc., would be aroused in the early morning with a severe headache, dizziness, and if not promptly treated by the family physician, would result in convulsions. The condition of the nervous system, too, has been considered by all the "cause searchers," and I believe that very often the acute sensitiveness of the nervous system has lots to do with the production of these convulsions. In one case, a negro girl during a premature labor, I believe the convulsions were caused by the ptomaines of decomposition of the fetus which had evidently been dead for four or five days, as decomposition was well advanced.

Dr. Bedford reports a case of puerperal eclampsia occurring in a woman with jaundice, and after treatment for same with mercury and the other means used at that time for the relief of jaundice, she had no return of the convulsions. Notwithstanding these cases occurring in others than the albuminuric woman and the cases of albuminuria of the parturient woman who does not convulse, I think albumen found in the urine of the pregnant woman sufficient grounds for treatment—should no other symptoms of uremia occur, without treatment, however, we are very apt to have other symptoms occurring.

Fortunately, there are always sufficient warnings in these cases for prophylactic medicine to do wonderful work; another example of the old axiom, "an ounce of preventive is worth a pound of cure." One of the earliest symptoms of the malady is manifested in the eye. The optic nerve and retinal changes early, even with the first trimester causing dimness of vision, eye weakness or inability to use the eyes any length of time without fatigue; dark spots before her eyes—double vision; or even amaurosis. One case treated by me, which I expect to report at the proper place in this paper, was totally blind two or three hours before the convulsions occurred.

Tinnitus aurium, vertigo, headaches, impaired hearing, depressed spirits and insanity all point to uremia. The headaches are sometimes confined to one side of the head; we also find them with nausea and vomiting. Fdema of the feet, legs, face and hands should lead to an examination of the urine which is almost always found scanty, highly colored, with high specific gravity and loaded with albumen. Examined microscopically, it exhibits renal epithelial cells, tube casts—either hyaline or epithelioid—with perhaps red blood corpuscles —casts may be present without red blood corpuscles and vice versa. The breath very likely will have an ammoniacal odor. Prognosis is good when seen early and the proper treatment given; if there does not exist an organic heart or kidney disease. If there is not good treatment and a full co-operation of physician and patient the prognosis is unfavorable to mother and child. Professor Merriam, in 1816, gave the death rate about 50 per cent. The death rate to mothers in 1885 was 32 per cent., but since then it has been reduced to a lower rate. The same report gave the child rate at 83 per cent. Cases are reported in which there was no evidence of intoxication of the child when delivered, but soon after developed convulsions. When it comes to the treatment of puerperal eclampsia it is divided into prophylactic and the treatment during the convulsions, or after they have occurred. It is our duty to fully apprize our child-bearing patients the importance of recognizing and reporting the early manifestations of the convulsions. I find that a great many of pregnant women have these manifestations at some period during pregnancy, and, so far, I have never had a case of eclampsia where there was proper prophylactic treatment at the proper time.

Just a few days ago I was consulted by Mrs. E., who complained of some nervous phenomena that she did not understand, and upon investigation I learned that she was constipated with scanty, highly colored urine, nausea, vomiting, vertigo, headache, and dizziness of vision; gave the usual treatment and within three days these symptoms had disappeared and so far have not returned, and I do not suffer any uneasiness concerning her, as I am quite sure she will carry out my treatment during the remaining three months of her pregnancy. The prophylactic treatment is to ascertain the cause, if possible, and I believe that can almost always be done to a sufficient certainty to administer proper treatment.

One important measure is to stimulate functional activity of all the organs of the body, especially the kidney, liver and gastro-intestinal canal, and this is best done by mercurial and vegetable cathartic, after which potass. bitartras in sufficient quantities to insure free action from the bowels and kidneys, or F.E. cascara sagrada and F.E. corn silk, or some other laxative diuretic. It is well to see after the habits of our parturient patients, having them avoid any social proclivities that weaken nerve force, to have them sleep well, take plenty of outdoor exercise, with a well regulated diet.

Dr. Jardin reported twenty-six cases successfully treated with saline solution subcutaneously, but he does not say in what stage it was administered, whether prophylactic or during the paroxysm. That solution having been so useful in my hands as a restorative agent I am inclined to look upon it favorably. To give the treatment I have found it best during paroxysm. I desire to report three cases that I have treated, viz.:

First was the one referred to under the etiological part of this paper, and was a negro girl aged 18 years, primipara, had been in premature labor for three or four hours (being five months in pregnancy), having had several convulsions, temperature a little above normal, with rigors, with uterine contractions regular, with a slightly dilated os, was constipated, with no history of uremic intoxication, bowels were acted on well with Ol. tiglii and Ol. olive, after which morphia, chloral and the bromides were all given without any apparent effects, with chloroform inhalations during convulsions; convulsions continued at intervals of one or two hours and sometimes oftener, until she was delivered of a five-months dead fetus in a decided state

of decomposition. Patient was very much exhausted with indication of septicemia and impending death; alcoholic stimulants with strychnine and bovinine were given in large doses, and greatly to my surprise, when I made my visit the next day she was bright and recovery was apparent. She made an uninterrupted recovery in a few days.

Case No. 2 was primipara, white, aged 39; had married a man 70 years old twelve months previous; had reached full term of pregnancy; was called to see her, and after a slow progress of labor for six or eight hours she became unmanageable, complaining of severe headaches, total blindness, vomiting, dizziness, developing convulsions in three or four hours; convulsions were of the most malignant type. Having had sufficient warning as to what was coming, I had succeeded in having her bowels well acted upon and to prevent the paroxysms by decided doses of morphia and atropia, hypodermically; upon development of first eclamptic seizure I gave 25 gtts. tr. veratrum viride hypodermically, repeating same dosage in thirty minutes as convulsions continued with pulse above 80 in frequency. In thirty minutes after administering the second dose of veratrum she was perfectly quiet, with no return of convulsions, labor being completed by instrumental delivery eight hours later just as soon as os was sufficiently dilated to admit passage of fetus. Upon the arrival of a consulting physician, who arrived some time after the last convulsion, a second dose of morphia was given to guarantee the "stay off" of convulsions, as that remedy had proved very successful in his hands, and he expressed a surprise to find the patient living after I had given 60 gtts of tr. veratrum viride. One point here worthy of mention is that the uterine contractions continued regular, notwithstanding she was completely comatosed, morphia, uremia, or all of these agents combined. Fetus was dead, but the mother made an uninterrupted recovery, except a slight rise of temperature for three or four days, which I called surgical (?).

Case No. 3 was very interesting, as there was such a complication of agencies, each of which seemed sufficient to produce death. She was aged 34, primipara, married one year ago, became pregnant and progressed very nicely until one month before time of confinement, when she developed all the signs of uremia, or a sufficiency to cause her to consult me. The usual treatment of mercurial cathartics, vegetable diuretics, were given, with potash bitartras, q.s. to act well upon bowels twice each day. Heard nothing more from her until one month later when I was called to attend her in confinement, learned that she had not been relieved of the uremia symptoms of one month ago, that she had not taken the treatment, as Mrs. A. across the street had told her "that she had had twelve children and had suffered with all these symptoms and a thousand others lots worse before the birth of each child, and that to take the medicine was unnecessary," and as it was bad to take she had omitted the treatment, and I think she will agree with her learned (?) lady friend over the way as she was introduced to puerperal eclampsia about ten or twelve hours after beginning of labor, notwithstanding my strenous efforts to abort the convulsions. She developed them soon after active labor had begun, before the os was dilated to any extent; upon the advent of eclampsia I at once gave hypodermic tr. veratrum viride 25 gtts, notwithstanding her heart's action was fast, weak and irregular; repeated the vertrum with morphia grs. ¼—and soon followed with strychnia and nitroglycerine to fortify heart—also gave quinine bi-muriate 6 grs. hypodermically, as uterine contractions had entirely ceased, with the patient in a semi-comatose condition; after giving normal liquid ergot and strychnia the uterus again resumed its work—delivering a well developed dead male fetus in about an hour. Patient aroused from her semi-comatose condition in about four or five hours and was apparently in an excellent condition until after noon of day of delivery when she had rigors with repeated rise of temperature, going as high as 105 degrees, and although she was given mercurial cathartics, with strichnia quinine, notwithstanding the fever remained high until an intra-uterine irrigation was done with a dropping of temperature, one degree the first hour after irrigation and was entirely free from fever in twelve hours. On the sixth day after delivery she was again attacked with a slow rise of temperature without rigors, temperature reaching 102, with considerable soreness across bowels in hypogastric region; diagnosed pelvic cellulitic, administered Qui. sulph. with acetanild and strychnia, applied cantharidal serum, resulting in a large blister with a reduction of temperature within five hours after the blister was formed.

As I stated in the beginning of this paper I did not intend to add anything to the literature on this subject, but I desire to call your attention to two features of puerperal eclampsia that I consider worthy of your consideration. The importance of thoroughly educating our child-bearing patients the necessity of reporting to us the first symptoms or indications of eclampsia, teaching them the early symptoms and of the importance of immediate prophylactic treatment. I repeat that I believe that every case of puerperal eclampsia can be abortëd. If there is not serious previous organic kidney, liver, or heart disease, and that if we make the proper effort to manage and treat our parturient patients puerperal eclampsia will soon be a disease of the past. Again the safety and proficiency of tr. veratrum viride in the relief of the attacks. I have my first case to see yet that was not relieved in one hour from beginning with veratrum and have never had to administer more than 50 gtts. So far as my research goes two authors have mentioned veratrum as an agent in these cases and they put no stress on its proficiency. I have never had a bad result from its administration, and if the proper guard is made, not giving it after the pulse has been brought below 70 degrees, I do not think any bad results will follow.

FOREIGN BODY IN THE EYE.*

BY T. C. EVANS, M.D., LOUISVILLE, KY.

THIS specimen is an eye which contains a foreign body—a small piece of steel. The patient came to me the latter part of July, late in the afternoon, and had received the injury early that morning. It was too late to do anything that evening, and I understood that he had been to see a number of specialists before coming to me. He left the office and came back the following morning.

In my first examination I found a vertical wound of the cornea nearly one-third of an inch in length, going through the cornea and lens. The iris was not wounded, and the external wound gave every indication that the man had a foreign body in the eye. The injury was received while he was working in a machine shop. He was much surprised to be informed that I thought there was anything serious about the injury, as he had not suffered much pain up to that time.

* Reported to the Louisville Medico-Chirurgical Society.

When he came the next morning I decided to try the giant magnet. We worked very carefully with this magnet for some time, but failed to remove any foreign body. We then tried to introduce the small or Hirshberg magnet, but met with no success. We made three or four attempts with both the giant and Hirshberg magnets to remove the foreign body, and failed. He had not complained of pain at any particular point to indicate that the foreign body was present.

Some days later I concluded, in order to give the patient the benefit of the doubt, that we would try the X-ray. He was taken to the office of Doctor Butler and two X-ray pictures were taken. Doctor Butler came to the conclusion that there was no foreign body in the eye, otherwise it would have shown in the X-ray pictures.

I tried to save the eye by applying iced cloths, the use of atropine, etc., but in two or three days the man developed all the characteristic symptoms of foreign body in the eye. Pain continued for four or five weeks, then to a certain extent subsided; but he always had an irido-cyclytis and his vision became gradually less and less.

The first week in October I decided to enucleate the eye, which was promptly done. Doctor Ray was kind enough to freeze the specimen, make a section and mount for me, which you will see plainly shows the foreign body. Measurement of the specimen is seven m.m. in length by two and a half m.m. in breadth, being a piece of steel or iron. The eye now shows why the magnet would not remove the foreign body. The piece of metal had passed through the vitreus and on into the sclera, and the magnet was not sufficiently powerful to draw it out of this point.

DISCUSSION.

Dr. S. G. Dabney:—I believe I saw this patient first, as he was referred to me by a railroad surgeon. The man promised me to go to an infirmary, and I made arrangements for his treatment there. He returned later, however, and said he did not want to go to the infirmary. I thought he had a foreign body in his eye from the symptoms present at the time.

It is interesting to know that sometimes these foreign bodies will elude detection both by the magnet and the X-ray.

Dr. J. M. Ray:—I saw this patient at the time Doctor Lederman and Doctor Evans were working on him with the magnet, and remember they failed to remove any foreign body by this means. I saw nothing more of the case until Doctor Evans brought the specimen asking if I would not mount it.

It had been claimed by those men using the magnet most extensively, that foreign bodies embedded in the posterior segment of the eye were very little influenced by the magnet. No possible magnet would have been strong enough to pull this piece of metal out of the location in which it is now seen.

The specimen is interesting, showing the retina not detached, with the piece of steel driven into the sclera.

Dr. T. L. Butler:—For some unknown reason I did not get a good skiagraph of this case. There was not the distinct picture that we usually obtain, which may have been due to some flaw in the technique. Possibly the plates I was using at the time were not what they should have been, or the X-ray should certainly have shown a piece of steel that size. I have taken skiagraphs of several cases of foreign bodies in the eye, some of them much smaller than this one, and the X-ray showed their presence. I remember I told Doctor Evans at the time that we ought to try again in this case, as I was not satisfied.

MANAGEMENT OF SMALLPOX TO CURTAIL ITS SPREAD.

BY D. S. HUMPHREYS, M.D., GREENWOOD, MISS.

THE methods for curtailing the spread of smallpox are old, have been thoroughly tried, and are simple in the extreme, and may be summed up in the three words, vaccination, isolation, and disinfection, and only because their application varies with the conditions surrounding each outbreak is a discussion of them admissible.

Of course, the ideal way is to have a hospital in an isolated place for the reception of the sick, a place of detention where all those who have been infected should be disinfected and kept during the incubative period; universal vaccination and disinfection. But the conditions were such in Greenwood during the winter of 1899-1900 that modifications of these plans were necessary. Here was a population of a little more than 3,000 people in a town whose area is a little less than 400 acres, which shows a density of population unusual in a country town. Of these, 1,136 were white and 1,890 were negroes. There were during the epidemic, from about October 1, 1899, to April 1, 1900, 532 cases of smallpox, of which 21 were white and 511 were negroes, with a death list of five whites and twelve negroes. Thus a little more than 27 per cent. of the negro population actually had the disease, and, of course, a much larger percentage were infected or liable to infection. Of this population, fifty-four had previously had smallpox, leaving about 2,400 persons to be protected from its ravages, and our work was directed to this end.

To meet these conditions with the means at our command was a prodigious undertaking, and I confess the work was entered upon with many misgivings, and but for the hearty sympathy and co-operation of the city authorities made manifest by the enforcement of every suggestion offered, failure would have been the result. But they threw all the responsibility where it properly belonged, on to the shoulders of the health officer. Work was commenced on the 20th of January, about four months after the outbreak of the pestilence. Investigation revealed 115 cases of smallpox, and more than 300 infected rooms, occupied by more than 700 persons, including the sick and those who had recovered. The conditions here disclosed, the filth, poverty, wretchedness, were almost appalling, and their relief was a problem.

It was not practicable to secure a house for so large a number of cases, and the infection was so widespread, a detention camp meant an outlay of money so enormous, that other plans had to be adopted. It was decided to isolate the sick in their own homes, to thoroughly disinfect every house with its contents not occupied by a sick person, and to vaccinate every human being who had not had variola. These plans were carried out carefully, systematically and without compromise or exception. An order was issued that every man, woman and child in town must get a certificate of recent vaccination from the health officer. No other certificate was acceptable and none was issued until the arm was carefully inspected and found to be sore. Typical scars did not answer the demand. In ten days 2,680 certificates of vaccination were issued, and in cases where recent vaccination had been practised and had not yet taken the certificate was good for only ten days, at the expiration of which time the individual had to be inspected again.

The town was divided into ten precincts and an intelligent immune inspector, who would rigidly carry out all orders, was appointed for each. These inspectors wore large, metal badges to indicate their authority, and were given books in which they were to keep lists of the names, occupation and all other information of the oc-

cupants of each and every house in his precinct. They visited each house twice daily, requiring an account of each individual. If he found a case of sickness it was reported at once to headquarters by telephone; if he found an occupant without a proper certificate of vaccination he was promptly arrested and taken to headquarters.

As soon as notice of a case of sickness was received the house was visited regularly until a diagnosis was made. If it proved to be smallpox a yellow flag was displayed in a conspicuous place, and an immune nurse, vested with authority to enforce the regulations, was placed in charge. Sometimes, where houses were contiguous one nurse could guard several houses. If any person visited a house where there was a yellow flag he and the householder were both arrested and fined or otherwise punished. These flags were kept in position until the house was disinfected, and interference with a flag was punished by fine or otherwise. Moving of household goods was prohibited unless the consent of the health officer was obtained, and people were not allowed to move without such consent. These regulations were to keep infection out of non-infected houses, and to keep the lists of occupants of the houses from becoming confused.

As soon as a patient was ready to be discharged he was himself disinfected by being scrubbed with hot bichloride solution and dressed in a suit of clothes which had been disinfected by boiling or otherwise. His mattress and pillow were burnt and other bedding boiled, and the room and its contents disinfected with the fumes of sulphur. The method of disinfection was very simple, and as follows: An iron pot containing sulphur (3 to 5 pounds to the 1,000 cubic feet of space) was set in a tub of water. A piece of paper half buried in the sulphur was saturated with wood alcohol, and after every crevice, crack and key-hole and fire-place had been securely sealed, the paper was lighted and the room kept closed for twenty-four hours. Bureau drawers and closet doors were opened and clothing lightly hung about the room. Public gatherings of all kinds were prohibited, and churches and schools closed.

All inspectors were required to meet at headquarters once daily to make reports and receive instructions. Food and medicine and fuel had to be furnished to all those in quarantine at public expense. Nurses were supplied with carbolized oil and small paint brushes, and each patient was anointed daily with this. This allayed itching and was thought to be preventive, to some extent, of infection. There was also a detention tent established, where all suspects taken sick in places which would be new foci were taken and kept until a diagnosis could be made. This tent was disinfected every time it was empty.

But what of the results? The records show that on the 1st day of February, ten days after work was begun, there were 134 cases in town under treatment, which number was reduced to 62 by the 1st of March, and on the 1st of April there were only six cases, all of whom were in a hospital in an isolated place, and no other cases developed afterwards. The records also show that no new case developed in a house which had been disinfected, although, in numerous instances, non-immune families moved into such houses. Some other data not directly in line with the subject-matter of this paper may not be uninteresting and are added.

As to the efficacy of vaccination as a preventive of smallpox, if any evidence were wanting, it could be easily gotten from the history of this epidemic, and where constant exposure in a few cases brought on variola in persons who had been vaccinated the disease was so modified as to make its existence in some cases doubtful.

A steamboat captain, who had never before been vaccinated, and who was vaccinated whilst nursing his child, and who continued to nurse his child a week, was taken sick on his boat with all the classical symptoms of headache, backache, high fever, nausea and vomiting, all of which disappeared about the third day when he got to Vicksburg, and one of the most prominent physicians of that city gave a doubtful diagnosis. After his return here he found and showed me unmistakable evidence of variola, and other cases developed on the boat.

A negro woman with one old scar was vaccinated while nursing her sick child. She sickened with all the classical symptoms and a careful search discovered only two pustules. Her husband, protected by vaccination, was very ill for four days, and the most painstaking search failed to detect any eruption at all. He unmistakably had *variola sine eruptione* if there be such a disease.

Some observations of cases complicated by gestation are appended:

1. Sue B., had variola during first part of ninth month. Baby born at term showing no marks. Baby afterwards exposed but did not have smallpox.

2. Lou G., had smallpox part of eighth and first part of ninth month. Baby born at term. No marks of having had smallpox, and subsequent exposure did not cause it to contract disease.

3. Nannie B.'s baby born fifth day of illness at term, second day of eruption, mother was never vaccinated, died on the fourteenth day. Baby was vaccinated day of birth, developed smallpox five days later, died on twentieth day.

4. Lillie C., had variola at seventh month, baby born at term with no marks, but never exposed afterwards.

5. Mattie S., had variola at fifth month, miscarried and died of hemorrhage.

6. Sarah B., had variola three weeks after labor at term, baby vaccinated after exposure, had varioloid, both recovered.

7. Ada P., had variola at eighth month, baby born at term showing variola in stage of desiccation, continuously exposed to infection afterwards for several weeks, but no subsequent attack.

8. Eliza A., vaccinated in eighth month of pregnancy, continuously exposed, and developed smallpox at middle of ninth month, giving birth to child three days after eruption appeared, child vaccinated on day of birth, developed eruption on eighth day and died on twelfth day.

9. Smithy T., vaccinated in fifth month, slept in an infected bed and in nine days developed smallpox, baby born at term, showing no marks, but was never exposed afterwards.

RUPTURE OF THE UTERUS DURING CHILDBIRTH.

L. H. HEMENWAY, M.D., MANCHESTER, VT.

IN the early morning hours of May 18, 1886, an urgent summons came to me from Dr. Slocum, of Dorset, for help in a difficult cast of labor. A long ride of fully ten miles brought me to East Rupert at about 2 a. m. The patient, as I learned from Dr. Slocum, had called him the evening before, and labor was progressing in a satisfactory manner until sometime after midnight, when the pains suddenly stopped, and he found the woman with a pulse of 120 and the pulse beat was weak and without resistance. Unable to account for this sudden and alarming change, the doctor gave stimulants freely, and cautiously gave ergot. There was apparently no response to this treat-

ment, and after a short time I was sent for. The woman was found quite weak, with a quick pulse, that was easily shut off by compression and with countenance pale and anxious.

Examination showed the head engaging in the upper strait of the bony pelvis, and the bones of the head very firm. After hasty conference with Dr. S., it was determined to use forceps. Fearing to use chloroform in her condition, stimulants and quinine were given, and ar attempt was made to apply the forceps. This failed because the second blade could not be passed without using more force than seemed best. Efforts were then directed toward strengthening the patient by giving quinine, and morphine and stimulants. While waiting for increase of strength, it was decided to send for more help, and a messenger was sent for Dr. Clemons, who arrived about 3.30 a. m. After his coming, it was decided to try to put on forceps again, and, failing in that, to perform craniotomy.

Dr. Clemons tried to apply the forceps, and, failing, I made a second attempt before resorting to perforating the head. There was no success, and then Dr. Slocum gave chloroform and ether. When an effort was made to perforate the head, it receded from the thrust, and almost at the same moment Dr. Clemons said, "Just put your hand here," and, apparently just beneath the abdominal walls, was felt the arm and shoulder of the child. Finding that I could still reach the head, and make out the sutures plainly, Dr. Clemons was asked to hold the chjld as steadily as possible, and another attempt was made to perforate the head, resulting in the slipping upward of the head, and nothing could be felt of the child per vaginam. Something had to be done at once, and it was deemed best to try to reach the child and deliver by turning. Abdominal section was not considered best under the circumstances.

So, after the proper cleansing of hand and arm and smearing with vaseline, the hand was introduced, and the first thing found was the placenta, which was detached and lying loose in the vagina; removing it, and hastily tying the cord and cutting it off, the cord was used as a guide toward the child, the arm was pushed upward carefully until the elbow was just within the labia and the body of the child could be reached. By careful traction on cord, to steady the body of the child, and by persistent and careful pulling downward on the body, the thighs were at last reached and after a short time the knees were hooked by the fingers, and turning was then easily accomplished. By carefully making traction, the body of the child was drawn downward, and after about an hour from the first attempt to perforate the head we had the satisfaction of seeing the delivery completed. The child was large and well formed. The weight cannot be given. There was no hemorrhage to cause anxiety, unless there was internal bleeding, and as the case went on we felt that there was no concealed hemorrhage. The effort made to deliver the head caused severe and long pressure on the vagina and urethra, and during convalescence there was developed a small slough of the urethra, which, however, healed kindly, leaving the canal pervious. A vesico-vaginal fistula was, unfortunately, one result of the case. After the delivery of the child, the mother was much exhausted, and the outlook for her recovery was bad. Dr. Clemons and I left the house, expecting to hear of her death during the day, for the pulse was very weak and rapid, but on the 20th a summons came from Dr. Slocum to see the case again, and, to my surprise, the patient was so much stronger that there was a first-rate fighting chance for life. The details of the case from this time I cannot give; nor can I give any record of temperature, pulse-rate or special treatment. The careful and unremitting attention of Dr. Slocum, who stayed night and day for fourteen days, and the loving care of three sisters, was rewarded by a complete return to health, with the exception mentioned before of a vesico-vaginal fistula. Dr. Slocum informed me that at the end of the third week the patient could sit up for a short time, and the fourth or fifth week he took her over the mountain, to her mother's home, for rest.

We called the case one of rupture of the uterus. It was not recognized until the second attempt to perforate the head had resulted in shoving the child beyond reach.

Sir Henry Thompson on Diet.—Sir Henry Thompson, who until he relinquished active practice, was the foremost genito-urinary surgeon in Great Britain and worked contemporaneously with Bigelow, is now hale and hearty at the age of eighty-two (*Jour. A. M.A.*). He is not only a great authority on his own branch of surgery, but also on dietetics. He has just published a remarkable book on "Diet in Relation to Health," in which his personal experience is a striking object-lesson. Thirty years ago, at the age of fifty-two, he gave up alcohol. For the sake of experiment five or six years back, he tried the effect of a claret glass of good wine at dinner every day for two months. Then the sick headaches and pains in the joints from which he had suffered in early life came back until he abstained again. Moreover, "after abandoning alcohol, the joints gradually lost their stiffness and ultimately became as supple and mobile as they were in youth, and continue absolutely so to this day." He adds that his is not a single example, "and really designates a very large class of active men possessing a more or less similar temperament." Half our bodily ills are due, he believes, to improper feeding. The necessity for diminishing the amount of nourishment taken as one grows older is not appreciated. "The extra glass of cordial, the superlatively strong extract of meat, are mistakes." Even the dentist shares in his condemnation. He gives the patient a set of masticators as efficacious as the originals, but he does not warn the patient that the body needs less food than in the heyday of life. Though not a vegetarian, Sir Henry maintains that three-fourths of our food should be vegetable. This ensures a lighter and more active brain. The light feeder, after his meal, has fresher wit and more cheerful temper. He does not snore in the arm-chair. Dyspepsia is unknown to him.

Infant mortality in the Zemstvos is reported to be 50 per cent., due to neglect, in consequence of the mothers working in the field or being employed as wet nurses. The rate of infant mortality is much lower among the Mohammedan population, where the law obliges every mother to nurse her own children. In one of the governments, for example, the rate of infant mortality among the Mohammedans is only 140.4 per 1,000, but among the Christians 342.1.

Bellis Perennis, the common daisy, is reported clinically to be of service for the ill-effects of cold drinks or ices, taken when over-heated, and also for getting wet under the same circumstances.

—The Japanese are now used to glass. At first glass in a railway carriage window had to be smeared with streaks of white paint, to keep passengers from poking their heads through it.

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FOR there is a perennial nobleness, and even sacredness in work. Were he never so benighted, forgetful of his high calling, there is always hope in a man that actually and earnestly works.—CARLYLE.

SOME ADVANCES IN THERAPEUTICS

THE distinguished Editor of *Merck's Archives* has reached the position so long occupied by THE TIMES on the problem of dosage, as indicated by the following pertinent quotation:

"It appears to us that one of the problems to engage the attention of the twentieth century therapeutists and pharmacologists will be the action of drugs as influenced by the dosage. This part of pharmacology has been neglected too much. There are hundreds of drugs whose action not only varies under different dosage, but it is diametrically different. Ipecac in very small doses allays vomiting; in large doses it excites it. Cocaine in small doses excites the reflexes; in large doses it depresses them. In the case of a number of drugs it will therefore be insufficient in the future to attach a label—depresso-motor, excito-motor, emetic, etc. The different action in different doses will have to be stated."

This statement confirms what we have so often repeated, that the dual action of drugs should be taught in all medical schools, as then we would have not only an improved therapeutics, but also the annihilation of sects in medicine.

This question of dosage is the very foundation of the practice of medicine, and its solution and general adoption will prove the greatest boon to humanity. The physician who uses drugs only in larger doses, or in smaller, neglects one-half of the armementarium which should be his. The indications which decide the dose are so diametrically different that it is easy for the student well versed in drug-effects to apply his knowledge for the purpose indicated.

If one would cure some cases of diarrhea, for instance, he will use small doses of some cathartic, which is sure to have the desired effect, provided the selection is appropriate, a *sine qua non* to be insisted upon.

It is not sufficient to know that the drug is cathartic, to make it suit a particular case, either in larger or smaller dosage, but its specific action upon organs and tissues must be known, and then it can be adapted to the individual requiring treatment of any kind.

The writer has not been without many interesting experiences along this line, in his long and varied practice. As an instance showing how the dual action of drugs applies may be mentioned the case of a convalescent from typhoid fever, who suffered from hemorrhoids. It was a case in which aloes in small doses was required. The attending physician at that time having had no experience with this drug in such an affection, and fearing that it might bring on a return of the diarrhea, declined the responsibility, which was assumed by the writer, who was the consultant in the case.

The relief was instantaneous, and the cure immediate. In this case external applications had been exhausted and a surgical operation advised. It was an experience that never will be forgotten by anyone concerned.

Numerous illustrations along this line could be mentioned if space allowed.

There is another point germain to this subject, which is absolutely necessary to include in our consideration if we would succeed, and that is, the method of selection, or adapting the remedy to a particular case. Many years ago, a well-known practitioner now deceased, inquired of the writer why it was that he had such excellent results with a certain drug in some cases of a given class and no result whatever in other cases with the same pathological lesion?

The answer to this inquiry solves a question which has been a barrier to better work in so many instances, as it covers the subject of an advanced classification of drugs, which admits of their being individualized. No thoughtful person can at this day practice medicine intelligently unless he can give good reasons why he selects a remedy in preference to another, and why it cures in one case and not in another of the same disease.

The symptoms of disease are simple expressions of pathological lesions which sometimes can be made out, and at other times are too obscure for this purpose, but the physician must prescribe even if he is not sure of his diagnosis, in other words, he must prescribe upon the symptoms presented. No two cases of disease present identically the same phenomena, and hence the patients must be studied as individuals, and not as pathological specimens alone. Let one ask himself why he selects calomel in preference to podophyllum, or iron in preference to arsenic, and so on, and a correct reply will answer the question of our inquirer.

We sincerely hope that the Editor of *Merck's Archives* will continue the study of the subject which he has begun, and we assure him all the assistance we can give in his undertaking, and it shall be along broad and scientific lines.

Many therapeutic methods of great advantage are

constantly coming forward, one of the latest, most important and interesting being a surgical procedure for the cure of chronic Bright's disease, devised by Dr. George M. Edebohls of this city, which marks an epoch to be noted. He says there is no legitimate doubt as to the curability of the disease by operation without mortality, and details eighteen cases to prove it.

Patients with chronic Bright's disease in these days continue to live under advanced drug therapeutics and "rest cure" for many years in comparative comfort. With our host of newer remedies we are able to promptly meet conditions as they arise, and patients continue to a ripe old age, where in former times they succumbed rapidly to the disease. This result cannot be expected, however, by the tyro in medicine, as it requires knowledge and experience to accomplish. It requires also a knowledge of the dual action of drugs.

Uremia is not the condition to be dreaded by the well-equipped therapeutist that it once was. It will not do, however, to prescribe drugs in such an emergency without a full knowledge of their physiological effects. It will not answer to prescribe digitalis when strophanthus or adonis will do better, nor morphine sulphate when heroin will much more surely and safely ward off an impending convulsion, without suppressing any of the secretions or endangering the action of a single organ. In our experience heroin is far better than morphia in any such case, and is a great advance in drug therapeutics in such heart and kidney lesions as require its aid. Crataegus oxyacantha is another of the newer wonderful drugs which has come to our rescue in some of these intractable cases with impending heart-failure. With such heart tonics as caffeine, nitro-glycerine, strychnia and numerous others, we should not despair or find it difficult to relieve the alarming symptoms which sometimes arise in cases of this character.

It is now claimed that acute nephritis is without sequela as well as mortality, but as it is not a self-limited affection, it requires most careful modern treatment therapeutically. In conclusion, we can say that in many lines therapeusis has made wonderful advances, so great that one must keep constantly on the alert to even remain in sight of the progress which is going on.

THE CLINICAL USE OF THE HÆMATOCRIT.

OUR attention has just been called to the hæmatocrit by a case of pernicious anæmia, in contrast with several trivial cases of secondary anæmia. It is the custom of hæmatologists to decry the hæmatocrit as inexact, as compared with the hæmatocytometer and to state that it is impossible to manipulate it without danger of coagulation of the blood before a reading can be secured. We make no pretense of being a hæmatologist—we are merely a clinician—but we regard the hæmatocrit as a tried and true friend. Both of the criticisms offered are correct—to a certain degree. As its unfavorable critics have used it, the hæmatocrit is likely to fail because of the coagulation of blood. The secret of success in this regard is rapidity of movement. The first few trials of the instrument are bound to be failures; one must be so familiar with the manipulations as to be able to fill the capillary tubes quickly, to spring them into the frame without having to stop to think which end has the spring attached and the frame must be placed on the spindle of the centrifuge and the latter revolved with the greatest promptness. The most practical hint that can be given in this matter is to pay no attention as to whether the numbers on the tube run up or down. It is just as easy to read the serum—or rather plasma—as to read the percentage of cells and the other factor is simply the difference between the first number read and one hundred. Another very great aid is to have an assistant ready at the crank, prepared to turn rapidly and evenly the instant that the frame is on the spindle. Both tubes should be used, and if the reading varies more than 2 per cent. it should be concluded that the result is unreliable. The estimation of the cells can be made within a minute and the tubes can be cleared of blood by blowing through them, before the blood has coagulated. Prompt cleaning saves much trouble; indeed, so rapid and easy is this method of blood measurement that it is always less trouble to make the examination than to clean the tubes. The simplest and most efficient method of cleaning the tubes is to connect them —after blowing out the obvious mass of blood—to a small funnel by an inch of soft rubber tubing. A plug of absorbent cotton is placed in the funnel as a filter to prevent the entrance of dust or other particles and a cubic centimeter of potassium hydrate solution is run through. After cleaning both tubes, they are rinsed with pure water in the same way and dried by blowing air through them, by means of a bulb. If coagulation does occur, the clot may be loosened by a bristle or fine wire.

In the case of pernicious anæmia alluded to, the first result was 9 per cent. of red cells and 1 per cent. of whites. As this is an extraordinarily low reading, it was verified by a second test. Usually there are not enough whites to be measured, though a grayish film is visible on top of the red column.

The examination of the stained specimen in this case was an object lesson as to why there should not be a correspondence between the hæmatocrit and the hæmatocytometer. The red cells were of every conceivable shape and size, some being more than twice the diameter of the normal, some appearing as pin heads in the microscopic field. Now granted that the average size of the red cells were always the same, there should be a correspondence between their estimation by volume and by count, each percentage by volume corresponding to 100,000 to the cubic millimeter, since the respective normals are 50 per cent. and 5,000,000 per cubic millimeter. But there is no evidence that the poikilocytosis almost always found in high grades or anæmia does vary about a cell of definite, normal average size. Thus, we cannot expect more than an approximate correspondence between the hæmatocrit and the hæmatocytometer. The conclusion reached by so many hæmatologists that this

argues against the former is not well founded. Why do we want to know the mass of red cells anyway? We can answer this question intelligently only in the light of the physiologic function of these cells. So far as is known, their sole function is to carry oxygen and this obviously depends on two factors, the amount of hæmoglobin and the aggregate volume of the cells. Neither the hæmatocytometer nor the hæmatocrit gives any direct information as to hæmoglobin. To prefer the mere number to the volume of red cells is just as illogical as to estimate any commercial problem of carrying by the number of cars or carts rather than by their aggregate capacity.

The hæmatocytometer, in its present form, is not adapted to the quantitation of white cells, simply because it is not delicate enough. The normal leucytosis of about 7,500 produces a film too slight to be estimated quantitatively, though Dr. A. L. Benedict has made microscopic examinations of different parts of the cellular column from the hæmatocrit which show that, except for the entanglement of some small lymphocytes with the red cells, the centrifuge almost completely separates the white from the red cells. If we estimate the average leucocyte as five times the volume of the average red cell, one per cent. of white cells in the hæmatocrit represents a leucocytosis of about 20,000, and this is the impression received from the inspection of the stained specimen, but it should be understood that any attempt to make a volumetric estimate of white cells is still impossible, although reports of such estimates are occasionally found in literature. We can only say that any measurable mass of leucocytes means a considerable increase and that if the proportion reaches two or three per cent. or more, the increase is so enormous as strongly to suggest leucocythæmia and not merely leucocytosis.

But for estimating red cells, that is, the power of the blood for carrying on internal respiration, the hæmatocrit, properly used, affords the clinician a prompt method, saving of eye strain and reliable provided that the examiner is not merely thinking of something that will automatically do counting for him.

INEBRIETY.

CHARLES L, DANA (*Medical Record*) arrives at the following conclusions as a result of the study of many thousands of cases in the wards of Bellevue Hospital:

In 97.5 per cent. of one series, alcoholic heredity existed. Of occupations not the day laborers, but the mechanics, artisans and small tradesmen furnished the greatest proportion of cases. The indoor workman is oftenest the victim. Women furnish about 37 per cent. Two-thirds began drinking before twenty. The average duration for men of the drinking habit is about fifteen years. Hard drinking can be seldom carried on for more than twenty years.

In line of treatment, supervision in an institution is ideal. Practically, drug cures with a basis of strychnine, atropine and apomorphine are the main reliance. Overfeeding, quiet and tonics are valuable.

The writer believes that "on the whole, alcohol has produced more beneficent results than it has done injury, for its most serious effects are seen in the class that we call unstable and degenerate, from whom not much good to the race could be expected anyway.

"Alcohol produces degeneracy in the individual and a still greater degeneracy in the descendants."

It seems to us that the statements in the last two paragraphs are mutually inconsistent, if not contradictory. They amount to this:

"Alcohol has done more good than harm, because its worst effects are seen in the army of worthless degenerates—to which army it is constantly bringing in recruits from among the *un*degenerates and their yet more luckless offspring."

Those "beneficent results," we fear, would show up but poorly in the face of such an exhibit.

SHORTCOMINGS IN THE OPEN-AIR TREATMENT OF CONSUMPTION.

DR. GOODHART'S Address in Medicine, delivered at the last annual meeting of the British Medical Association, is characterized, and, we think, with justice, by the *Calcutta Journal of Medicine*, as "the most thoughtful, philosophical, and, what is more to its credit, truthful address that has ever been delivered before this body, the largest medical corporation in the world." In treating of the "Difficulties of Medicine," which proceed from the doctor himself, the speaker administered a deserved rebuke to those who allow themselves to become willing slaves to routine and fashion. Not only is this tendency manifested in respect to drugs which, "while the sun shines upon them, become the darlings of society," but even the open-air treatment of consumption is also bidding fair to come under the baneful influence of routine. "What," he asks, "does the consumptive and his friend see in this new treatment (though it is hardly a compliment to our environment to call it so)? He sees a residence for a few months in a home, and a cure at the end of it. Is that what he has any chance of obtaining? Certainly not, and in proportion to the exaggerated hope will come the bitterness of the disappointment to the sick, and the discredit to us. The benefit to be obtained in these sanatoria is that there will be learned a habit of life—what we mean by plenty of good food and plenty of fresh air, and having learned his lesson the tuberculous man will need to practise it all the rest of his life. There is no cure in this treatment as the sick man understands cure; for although it is true that there is no disease that is more often arrested than phthisis, it is equally true that there is no disease that has a more inveterate tendency to relapse, and I very much fear that when you come to strike the balance between arrest and relapse, the latter has the best of it. Therefore, if the open-air treatment is to take its real place and be of any abiding value, the prin-

ciples of the sanatorium must be introduced into the home."

A more timely warning was never uttered. May it be headed by the profession, and through them enforced upon the public.

An article by Dr. Alex Pentland, in the *Australasian Medical Gazette*, for October 21, 1901, contains a suggestion along the same lines, and of no less value as bearing directly upon his theme: "The Open-air Treatment of Consumption." "The effects of that treatment," the writer acknowledges, "are, so far, not very lasting." After citing statistics in proof of this, "Why," he asks, "do such a large proportion of improved cases relapse so suddenly that after a very few years only a small proportion are alive and able to work? The reason is evidently that while rest and treatment are able to subdue the actively progressing tuberculosis, something further is necessary to fit the patient to meet the vicissitudes of ordinary life. We must go a stage further and harden the patient to work while still under healthy conditions. To make the treatment of real value for poorer patients we must get the patients early, keep them longer under treatment, find open-air occupations for them when dismissed, and keep them under observation after dismissal. The time spent in a sanatorium has an educational value, and to enable the poorer patient to profit by it, it is necessary that he should be placed in a position where he can practise what he has learnt.

"I cannot see why an agricultural colony should not be worked in conjunction with a sanatorium, where poultry farming and fruit growing might be made to pay a portion of the expenses. The larger part of the work about the sanatorium might be done with advantage to the patients by the inmates; they could, as they improved, be drafted to the farms, and finally a bureau could be utilized to find suitable occupations for those fully able to work."

CHILD EXCHANGE.

THIS title does not refer to "changing at nurse," or the substitution of fairy offspring, but to a plan devised by some charitable women in Berlin for furthering the development of children by enabling the poorer people of the city who cannot afford outings to send their children to country peasants and receive in return for an equal length of time peasant children who want to see the city. The physical gainers by this arrangement will chiefly be the city children, but the intellectual profit for the country children will be as great. By this system the vacation costs the parents nothing, except for traveling expenses, so that many children would be assured a pleasant and profitable holiday who would otherwise be unable to get away from home. With the object of extending these advantages, a society—whose president is the proprietor of a well-known bookstore in Berlin—has been formed among the families of certain German and Austrian States, England and Norway. There is even talk of exchanging children between neighboring countries, so that they may gain still more valuable experience.

It strikes us that in this way some of our millionaire philanthropists who get up summer excursions for the poor might widen their field of operations without much additional trouble or outlay—though it is questionable whether the farmer's boy would always derive unmixed benefit from such a barter of environments with the New York gamin.

ADJUSTABLE SEATS FOR SCHOOLS.

OUR attention has recently been called to the fact that the seating arrangements of a certain school take no notice of the variations of height of the pupils and that many are thus compelled to assume attitudes in studying and, especially in writing, that are awkward, uncomfortable and unhygienic. In our experience, very few public or private schools, academies or colleges attempt to provide adjustable desks and seats, though, for any particular class, fairly comfortable furniture is usually provided for the average pupil of the age for which the class room is originally intended. Pupils who happen to be larger or smaller than the average must stand the consequences of their physical fault or, if the exigencies of school development require the use of a room for a grade older or younger than was originally planned, arms, legs and spines must accommodate themselves to the change, rather than the furniture.

If a desk is too high for a pupil, the reading distance is too short, if too low, the head is bent forward and the eye is used in a position favoring imperfect return circulation of blood. If the seat is too low for the pupil, he usually adapts himself to it by putting his legs sideways and his reading distance lengthens or shortens, as his eyes pass over the lines of the page so that, for every line, there is a gradual change of accommodation, followed by a sudden return to that with which he started. We need not dwell upon the almost inevitable consequences of these infractions of the laws of ocular hygiene.

Any protracted and repeated deviation of the body from the symmetric position tends to permanent distortion with consequent enfeeblement of respiratory power and of general muscular poise and control. It is impossible to explain in detail just why asymmetry should interfere with each particular visceral function but, in general, we know that not only respiration but most other functions of the body, whether mechanic or chemic, are poorly performed if the spine is not in an antero-posterior vertical plane and if its normal curves and the adjustment of the other parts of the skeleton and the skeleton muscles, are thrown out of lateral symmetry. Possibly the frequency of displaced right kidney may be indirectly due to faulty hygiene during early life.

A large part of the education of childhood, viewed in the broad sense, consists of the training of muscles and of bodily poise. Entirely aside from the matter of actual visceral health, any factor which produces faulty and

ungraceful disposition of the trunk and limbs, by forcing a vicious habit upon the muscles, is to be deprecated. Practical success in after life depends largely upon the physical development and carriage of the body; to compel a man or woman to be ungraceful and lop-sided is too severe a punishment for the crime of growing too rapidly or too slowly during childhood. Writing and the more delicate use of the fingers in various arts are necessarily one-sided acts, for ambidexterity cannot be acquired except at a loss of specialization of the muscular senses. Writing is almost always the first specialized training of the muscular sense, as it is the most nearly universal. A pupil improperly seated in the schoolroom, is not only taught to write under difficulties, but his muscles are trained into habits of cramped action that render their future use for any purpose contrary to acquired "second nature" unless the body is twisted into a posture utterly at variance with what is primarily natural and best adapted to the free use of the various arm muscles. Very possibly, much of the eye-strain necessitated by the reading of poor writing, much of the prevalence of writers' cramp and other professional neuroses, and much of the prevalent inability to develop manual skill, is ultimately due to the compulsory distortion of children's bodies during their school life and especially to compelling them to write, draw, "figure" and perform various other delicate muscular acts while in cramped postures.

We can see but one solution of the problem. It is easy enough to gather statistics as to the average measurements of pupils of a given age and as to the average age of pupils to be expected in a certain grade, but no statistics can provide, for a class room of moderate size, the right proportions of seats and desks to accommodate a miscellaneous collection of pupils varying from their common average. The placing in the rear of the room of a row or two of "forms" of larger size than the average, does not solve the problem, especially as visual defects or the exigencies of discipline may require the taller pupils to occupy the front seats. Moreover, the tailor and the bicycle dealer have discovered what the physical statistician frequently overlooks, namely, that the total height is the sum of trunk measure and leg measure—two items of very variable ratio. Only by having every seat and every desk adjustable and by insisting that both shall be fitted to the particular pupil for the term of his occupancy of the room—oftener for rapidly growing children—can the problem be solved.

THE SECRET OF LIFE.

THE discovery announced at the beginning of the year by Dr. Albert F. Mathews, professor of physiological chemistry in the University of Chicago, to the members of the American Physiological Society in their annual meeting there, sounds so extraordinary, so wonderful as to be taken for a newspaper yarn rather than a scientific fact of the greatest importance, if it did not come confirmed and indorsed by men of recognized authority, and the principles underlying it were not in strict harmony with the hitherto observed facts and laws in physics, chemistry, physiology and kindred sciences. For not only does it claim to reveal the secret of the nerve and muscle stimulus involving the explanation of many problems connected with the vital process, the working of the theory based upon it goes for deeper yet, bringing the physiologist much nearer, in fact very near, to the clearing up of the mystery of life itself. As such, the discovery, justly regarded by no less a scientific man than Prof. Jacques Loeb of the University of Chicago as the most nearly fundamental physiological generalization in fifty years, is bound to work an upheaval not only in medicine and physiology, but also in philosophy, to which it furnishes the much needed solid scientific facts to build upon its theories of life and death.

The following brief recapitulation of the discovery as made by Dr. Mathews in the March *Century* will, better than any commentary, show that we are by no means exaggerating the importance of the new scientific disclosures:

"It has been shown: First, that the chemical stimulation of protoplasm is really an electrical stimulation; second, that the poisonous action of inorganic salts is due to the electrical charges of the salts and probably to the movements of these charges; third, that the negative charges stimulate protoplasm, while the positive prevent stimulation, and if not counteracted by the negative will destroy life; fourth, that muscle contraction is probably in its essence an electrical phenomenon and that the conduction of a nerve impulse is almost certainly an electrical phenomenon; fifth, for the first time we have a physical explanation, which agrees with all the main known facts, of the nerve impulse and changes in irritability; sixth, we have secured a physical explanation of the way in which an anesthetic produces its effect; seventh, we are led to the hypothesis of the identity of stimulation by light and by chemicals."

It will be easily seen how by the light of this discovery many hitherto unexplained physiological phenomena become quite intelligible. As an illustration take for instance the problem of muscular contractility, of which it offers a most satisfactory explanation. Knowing that muscle is like the nerve, colloidal in nature, it is evident that the negative current, or motor-impulse, entering the nerve, precipitates the colloids therein the same way and thus contracts the nerve. The explanation it offers of anæsthesia, on account of its simplicity, is well calculated to attract the attention of physicians. It is well known that the influence of anæsthetics is directly proportional to their ability to dissolve fat. Dr. Mathews has shown now that if the nerve can be kept from precipitation there can be no stimulus along it. This can be effected by "thinning" the solution in the nerve. The anæsthetics, carried through the lungs into the blood and so to the brain, there dissolve further the colloids in the highly sensitive brain cells and make the solution more stable. As long as this condition prevails no sensation can pass through the nerve. Any positively

charged ion will do this as well as a fat solvent, only ether is preferable for this purpose, as it is easily administered in minute quantities, works mildly and is quickly removed. The phenomenon of drunkenness is similar or rather identical with anæsthesia and can be explained in the same way. The alcohol carried through the blood to the brain, like ether, affects there the brain cells, rendering the solution more stable and reducing man's power to send motor currents to the muscles, or, eventually reaching the muscles, reduces their ability to contract. In this we can also see the rationale of the use of alcohol or whiskey as a cure for snake bite. According to Darwin, death from snake bite is due to immediate coagulation of the nerve colloids caused by the poison. But we have seen that the effect of alcohol is to dilute this substance, so if the alcohol can reach the nerves and brain cells in time it will prevent the action of the snake poison.

The simple and rational explanations of these and similar physiological phenomena offered by the new discovery alone are sufficient to attract to it the interest of men of science, in particular of physicians and physiologists. These things, however, sink into shade if we consider the light it throws upon the most difficult problem the human mind has to grapple with—the mystery of life. From the hoariest ages the greatest intellects over and over again asked the question, "what is life?" and in vain tried to find a satisfactory answer. True, theology, metaphysics and philosophy were ever ready to explain the mystery; but all their answers, from "the breath of life," spoken of in the Scriptures down to the "vital power," as this unknown was called by the chemists of old, though satisfying perhaps the minds of the simple and faithful, cannot stand the scientific test, and, therefore, must be rejected by our rationalistic age as mere fanciful speculations without foundation. And now science offers us with this discovery what appears to be a solution of this most important problem. It is, if we are not wrong in our deductions—life is electricity. However loath we are to accept this materialistic theory of life we must admit that it is in perfect agreement with all the latest results of modern scientific research, and in particular with the monistic view of the world held by the most advanced intellects. Already the celebrated Hertz expressed his belief that all forces of nature might after all be but various modes of the one principal force—electricity; and if we consider life as a mere physical force, why should it not also be a mode—let us say the highest—of the same universal energy? But let us hope that science has not yet spoken her last word and may in the near future offer us a more comforting solution of the perplexing problem.

THE STARVATION TREATMENT OF APPENDICITIS.

A. J. OCHSNER, *American Journal of Surgery and Gynecology,* January, 1902, as the result of his clinical observations, formulates the following principal conclusions:

Peristaltic motion of the small intestines is the chief means of carrying the infection from the perforated or gangrenous appendix to the other portions of the peritoneum, changing a circumscribed into a general peritonitis. This can be prevented by prohibiting the use of every kind of food and cathartics by mouth, and by employing gastric lavage in every case in which there are remnants of food in the stomach or in the intestines above the ileo-cecal valve, as indicated by the presence of nausea, or vomiting, or meteorism. This form of treatment, when instituted early, will change the most violent and dangerous form of acute perforative or gangrenous appendicitis into a comparatively mild and harmless form. In cases of doubtful diagnosis this form of treatment should always be employed. The patient should be permitted to recover fully from his acute attack before an operation is performed, except in cases encountered within the first thirty-six hours after the beginning of an attack or in case of the formation of a superficial circumscribed abscess.

The above positions are controverted in the most decided manner by J. H. Carstens, who, in the *New York Medical Journal,* January 18, reports three specimen cases out of a large number confirmatory of his views. These are, first, that the conservative treatment of appendicitis consists in prompt operation; secondly, that the starvation method of procrastination is vicious and has cost many lives, because it is used as an excuse to dally with patients that should be promptly subjected to removal of the organ.

REGISTRATION OF DEATHS.

From a circular (Vital Statistics, No. 71), issued from the United States Census Office, and forwarded to us by its chief statistician, W. A. King, we learn that this office is primarily interested in the registration of deaths because the data required for the mortality statistics can only be obtained in complete and reliable shape where the deaths are recorded, immediately after their occurrence, under compulsory registration laws. The circular is designed to give the necessary additional and official impetus to the extension of the registration of deaths into the cities and States that are now non-registration areas and also is intended to furnish the authorities of States and cities possessing such systems with the most authoritative information to guide them toward the goal of national unifomity of systems, methods and results.

The essential purposes served by records of deaths are, first, the protection of certain rights and privileges of individuals; secondly, the compilation of sanitary statistics, and, lastly, the collection of data bearing on the movement of population, and forming a necessary part of the statistics published by almost every civilized nation except the United States.

A registration law to fill these requirements and to be effective in operation must include provisions for, (1) immediate registration of deaths; (2) the furnishing of death certificates of prescribed form; (3) the requirement of burial or removal permits; (4) the ob-

taining of efficient local registrars in each political district; (5) fixing the responsibility for obtaining and filing the original record of death with the local registrar. This duty is best imposed upon the undertaker or whomever else has charge of the interment or other disposition of the body; (6) giving the central registration office full control of the local machinery; (7) the transmission and preservation of records; (8) penalties for violation of any of the provisions of the law.

It does not appear practicable to draft a complete law that will be equally applicable in all States, but it is believed that any law framed so as to include the essential features noted above will prove successful in operation. It is very desirable that States should adopt uniform methods so far as possible and thus secure the largest amount of agreement in the practical details of their laws and the results accomplished.

Model forms of death certificates and burial permits are given in an appendix.

BIBLIOGRAPHICAL.

SAUNDERS' AMERICAN YEAR-BOOK.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1902. A yearly Digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from journals, monographs, and text-books of the leading American and foreign authors and investigators. Arranged, with critical editorial comments, by eminent American specialists, under the editorial charge of George M. Gould, A.M., M.D. In two volumes—Volume I., including General Medicine, Octavo, 700 pages, illustrated; Volume II., General Surgery, Octavo, 684 pages, illustrated. Philadelphia and London: W. B. Saunders & Co. 1902. Per volume: Cloth, $3, net; half-morocco, $3.75, net.

The plan of issuing the Year-Book in two volumes, inaugurated two years ago, met with such general favor with the profession that the publishers have decided to follow the same plan with all succeeding issues. Each volume is complete in itself, and the work is sold either separately or in sets.

The contents of these volumes, critically selected from leading journals, monographs, and text-books, is much more than a compilation of data. The extracts are carefully edited and commented upon by eminent specialists, the reader thus obtaining not only a yearly digest of scientific progress and authoritative opinion in all branches of medicine and surgery, but also the invaluable annotations and criticisms of the editors, all leaders in their several specialties. As usual, this issue of the Year-Book is not lacking in its illustrative feature; for, besides a large number of text-cuts, the Surgery volume contains five, and the Medicine volume four, full-page inserts. In every way the Year-Book of 1902 fully upholds, if it does not strengthen, the reputation won by its predecessors.

A very timely TREATISE ON SMALLPOX, to sell at $3, is announced for publication early in April by J. B. Lippincott Company. It is written by Dr. George Henry Fox, Professor of Dermatology in the College of Physicians and Surgeons, New York City, with the collaboration of Drs. S. Dana Hubbard, Sigmund Pollitzer, and John H. Huddleston, all of whom are officials of the Health Department of New York City, and have had unusual opportunities for the study and treatment of this disease during the present epidemic.

PSYCHOLOGY, NORMAL AND MORBID. By Charles A. Mercier, M.B., M.R.C.P., F.R.C.S.; Lecturer on Insanity at the Westminster Hospital Medical School, and at the London Medical School for Women; Author of "The Nervous System and the Mind," "Sanity and Insanity," etc. London: Swan, Sonnenschein & Co.; New York: The Macmillan Company. 1901. 8vo, pp. 518. Price, $4.

The author very properly begins his subject with the tenet "that insanity is no exception to the rule which requires a knowledge of the normal as an indispensable preliminary to a knowledge of the abnormal." It is largely due to the absence of any work of the class under review that the contrary opinion has been maintained so long.

The existence and nature of delusion are the most important studies of the alienist, and heretofore he has had little if any help from text-books, in the solution of these important questions.

The author does not claim perfection for his "first essay in an untilled field," the disorders of mind have never before been systematically examined, arranged, and correlated with the normal types from which they erringly depart, but he hopes much from the future in a finished result along the lines he has traced. It may be said that the foundation of this work is based upon the science of reasoning processes generally, and a considerable portion of the book is devoted to Modes of Thinking, a very important and practical subject.

The author has attempted to show how a wrong conclusion is arrived at, rather than a right one, and we must admit that his logic is convincing.

The study of delusion necessarily involved a preliminary consideration of belief from a broad point of view, including the Doctrine of Chances. Probability is distinguished from Likelihood and from Expectation, and the discriminations are claimed to be useful.

If the author's views of Free-will prevail, there is hope for a modified Determinism, which will end a long controversy.

The section on Memory, of which four varieties are drawn, is free from ambiguities, and the process of Remembrance is clearly differentiated.

In connection with the relation between Affection and Thought is advanced a New Theory of Emotion.

The text is classically written, is arranged in sections, a key to which is furnished, and is full of interest to the student of the important subjects to which it relates.

We might also add that the book is afforded at a very reasonable price.

HAND-BOOK OF BACTERIOLOGICAL DIAGNOSIS FOR PRACTITIONERS, including Instructions for the Clinical Examination of the Blood. By W. D'Este Emery, M.D., B.Sc., Lond.; Lecturer on Pathology and Bacteriology in the University of Birmingham. Philadelphia: P. Blakiston's Son & Co., 1902. Pp. 215, 12mo.

This little book is intended to help the general practitioner to arrive at a correct diagnosis by means of bacteriology, and to aid him also in prognosis and treatment.

The subject is made as simple as possible in its methods, in order to meet the class to which it appeals, and, by means of this work as a guide, the practitioner could proceed at once to the practical part of the work,

which is the all-important point to him. There can be no mistake in ordering this book, if interested in the subject, as it is just what is wanted.

OPHTHALMIC DISEASES AND THERAPEUTICS. By A. B. Norton, M.D., Professor of Ophthalmology in the College of the N. Y. Ophthalmic Hospital, Surgeon to the Hospital, etc. With ninety illustrations and eighteen chromo-lithographic figures. Third edition, revised and enlarged. Philadelphia: Boericke & Tafel, 1902. Price, $3. pp. 659, 8 vo.

The second edition of this work having been exhausted in a short space of time, the third was made possible, and is an evidence that the work is appreciated by those for whom it is intended. A concise clinical index has been added, covering the drug therapeutics contained in the text. The book will be found useful to the general practitioner.

DISEASES OF THE INTESTINES. Their Special Pathology, Diagnosis, and Treatment. With sections on Anatomy and Physiology, Microscopic and Chemic Examination of the Intestinal Contents, Secretions, Feces, and Urine; Intestinal Bacteria and Parasites; Surgery of the Intestines; Dietetics; Diseases of the Rectum, etc. By John C. Hemmeter, M.D., Philos. D., Professor in the Medical Dept. of the University of Maryland; Consultant to the University Hospital and Director of the Clinical Laboratory; Author of a treatise on "Diseases of the Stomach," etc. In two volumes. Vol. II: Appendicitis, Tuberculosis, Syphilis, Actinomycosis of Intestine, the Occlusions, Contusions, Rupture, Enterorrhagia, Intestinal Surgery, Atrophy, Abnormalities of Form and Position, Thrombosis, Embolism, Amyloidosis, Neuroses of the Intestines, Intestinal Parasites, Diseases of Rectum. With plates and many other illustrations. Octavo, 675 pages. P. Blakiston's Son & Co., Philadelphia, 1902. Price, Vol. II., net, $5.00. Set complete, $10.00.

The second volume of this valuable treatise embraces those pathological conditions that occupy the borderland between internal medicine and surgery. Exact methods desert us in many instances in the consideration of the pathology of the intestinal function, and the author has attempted to fill this gap with the only other means, viz.: clinical experience. Intestinal obstruction has been found worthy of special consideration as to pathogenesis and mechanism, and too much cannot be said on this important subject. The author has presented the facts and truths as thoroughly as possible in the light at his command, and he is not dogmatic in his conclusions. The work will be found a great aid to the general practitioner as well as to the specialist, and can but prove an inspiration to exact and objective clinical observation as well as experimental investigation.

The text is clearly and comprehensively stated in a scholarly manner, and is well printed in readable type.

A MANUAL OF GYNECOLOGY FOR THE USE OF STUDENTS AND GENERAL PRACTITIONERS. By F. H. Davenport, A.B., M.D., Assistant Professor in Gynecology, Harvard Medical School. New (4th) edition, revised and enlarged in one 12mo volume of 402 pages, with 154 illustrations. Cloth, $1.75, net. Lea Brothers & Co., Philadelphia and New York, 1902.

This compact volume was originally prepared for a twofold object: first to give to the student in clear terms and with sufficient detail the best methods for examination, and the most trustworthy therapeutics of the more frequently met diseases of the female pelvic organs, and second to assist the general practitioner in understanding and successfully treating the gynecological cases which he meets in his every-day practice. For the sake of brevity and clearness the author describes only such treatment as in his large experience has proved to be of the greatest practical value. Special attention has been paid to many minor points which, although of great importance, have strangely enough been omitted from the larger treatises on the subject. Maximum practicality has been the aim of its author, and the demand which has rendered necessary the printing of four large editions shows clearly the esteem in which his work is held by the profession.

The volume has again been carefully revised to the latest date, considerable new matter has been added, as well as several new illustrations, but no advance has been made in its very moderate price.

SYPHILIS: A SYMPOSIUM. E. B. Treat & Co., New York, 1902. Price, $1.00. 12mo, pp. 122.

This little volume contains articles from seventeen prominent syphilographers, republished from the *International Magazine*. The articles, clearly and concisely written, are practical, and will be found valuable and serviceable.

RETROSPECTIVE THERAPEUTICS.

Tuberculosis Treated with Carbonic Acid.—Dr. Hugo Weber, of St. Johann-Saarbruecken, writes in *Medico* (September 4, 1901) "On the Treatment of Tuberculosis of the Lungs by Means of Carbonic Acid," and shows that all the recognized methods of handling the disease are finally dependent upon it. Besides the various nutrient and therapeutic measures which he recommends, he lays especial stress upon increasing carbonic-acid production by the administration of levulose, which is oxidized in the body much more completely than any other sugar, and hence is well borne by diabetic patients also. He administers a heaping tablespoonful of Schering's preparation, four times daily. And since levulose is a nutrient rather than a medicine, it does not matter whether it is taken before or after eating, or with the food and drink. The classical investigations of L. von Aldor and Clem (*Therap. Monatshefte*, August, 1901) have shown that fruit sugar or levulose increases the amount of gastric juice while diminishing its acidity, hence it is not only a most excellent nutriment, but actually aids and stimulates digestion. No wonder, he says, that he has been able to cure a whole series of cases in the initial stage of phthisis pulmonum with this medication alone. In advanced cases of tuberculosis, where cavitation had occurred, levulose, or the production of carbonic acid by any ordinary means alone was not sufficient, and Weber employed hypodermic injections of chemically pure liquid paraffine, with the idea that that hydrocarbon, when absorbed by the body, would be converted into carbonic acid and water. By this combined process, levulose internally and paraffine injections, he has been enabled to cure patients in advanced stages of tuberculosis, such as are often met with in ordinary practice. Out of the fifty-two cases which were reported in the March number of the *Therapeutische Monatshefte* of this year, he has cured thirty-two, fourteen are considerably improved, and only six have died.

First Symptoms of Acquired Syphilis.—Deschamps (*Bull. de l'Académie Royale de Médecine*, No. 3, 1901) believes the following to be true:

(*a*) That syphilis, from the moment the virus begins to act at the site of the primary sore, makes, in its evolution, exactly the same course as the vaccinia: (1) Itching, sometimes intolerable, but never absent; (2) diffuse redness, sometimes confined to small area, at the same time as the pruritus; (3) the formation of a small, reddish papule; (4) then a vesicle, a little larger than the papule, the liquid from which soon dries and forms a scab; (5) next a pustule, which is surrounded by a small inflammatory area; then follows healing, as in vaccinia; (6) on this follows a depressed wound, with a protruding border and induration; (7) finally, the typical, indurated chancre.

(*b*) That the abortive treatment should prove successful, if instituted at the onset; it has proved efficacious even when instituted as late as the vesicle period.

(*c*) That abortive treatment is absolutely useless, as experience has shown, when instituted in the pustular period.

(*d*) That reinoculation alone may possibly make this demonstration of the abortive treatment absolute.

Physiological Action of Petroleum. —White (*Jour. of Med. and Science*) says that petroleum inhibits the growth of putrefactive and pathogenic bacteria, such as are met with in the alimentary canal, yet does not inhibit or interfere with peptic or pancreatic digestion. It is, therefore, an agent for relieving flatulence by preventing fermentation in such conditions of the bowel; in fact, it acts the part of an intestinal antiseptic.

By its action in stimulating peristalsis, and increasing diffusibility of intestinal contents, it helps the natural movements of the bowel and favors the elimination of noxious and toxic products from the system.

Hot Water Irrigation of the Bowels in Scarlatinal Nephritis.—Saundby, in the *Birmingham Medical Review* for September, 1901, quotes Kerley, who recommends irrigation of the colon with hot water as the best means of restoring the functions of the kidney in scarlatinal nephritis. It should be employed whenever the quantity of urine is diminished or when convulsions occur. In a child aged three years, 500 to 750 cubic centimeters of water, at a temperature of 43° C., should be introduced by means of a rectal tube passed into the rectum for a distance of 2½ centimeters. If the water is returned at once, it must be repeated, and irrigation should be repeated every six or eight hours. After three or four administrations, the kidneys generally commence to act, and abundant diuresis takes place.

Headache in Typhoid.—The cephalalgias in the early stages are often very distressing. Belladonna is very useful in controlling this symptom (*Public Health Journal*); when associated with acute delirium, it is more strongly indicated. If the headache is accompanied with pain in the back and limbs, gelsemium is called for; and, if marked languor be present, which opening the eyelids or moving the balls aggravates, bryonia or rhus toxicodendron is suggested, and colchicum will help where the headache is associated with delirium; when it is especially bad and unyielding, spigelia will bring the needed relief; if, not, and the nervous phenomena are being greatly aggravated, then resort to morphine must be had.

The Klopfen Treatment of Tuberculosis.—The method of treatment of pulmonary tuberculosis, known as the "Klopfen" plan, consists (*Diet. and Hyg. Gaz.*) in slapping with a silver paper-cutter the surface of the chest in front, behind, and at the sides. A scientific examination of the advantages said to result from this process appears to justify the conclusion that it is really a powerful means of mechanically stimulating the pulmonary apparatus and of dissipating the tendency to congestion, and in this manner promotes spontaneous healing of tuberculous lesions.

The Skirmish Line in Incipient Tuberculosis.—Writing on the above subject in the *Journal of Tuberculosis* (*Canad. Jour. of Medicine and Surgery*), Dr. Tyndale, of Lincoln, Neb., emphasizes the necessity of studying the respiratory process: "Seek for the first manifestation of tuberculous invasion in changes of rhythm in breathing, and do not wait for changes of pitch. . . What does normal respiration call for? An audible inspiration of vesicular quality, a pause, which is only a 'retard,' and a short and inaudible expiration. Well, the pathological changes are the reverse of this. They call for an interrupted rhythm, a broken accent, that which, in the music of the present day, is known as 'rag-time.' They may have an interrupted inspiration (as yet without change of pitch or quality), that rhythm which ancient mariners still call 'cog-wheel' respiration; or, there may be nothing but a distinct and prolonged pause. Again, we have of old the prolonged and audible expiration. When all three are combined, diagnosis is comparatively easy. It goes without saying that the percussion-finding gives no clue to the existing condition, save in confirming, by its normality, that no organic changes leading to alterations of pitch or of quality have as yet taken place."

White Wood as a Cure for the Tobacco Habit. —According to the *Eclectic Medical Journal*, the Liriodendron tulipifera, also known under the names of white poplar and white wood, is probably the largest of the lumber-producing trees native to this country, excepting, of course, the giants of California. The inner bark has been used to a considerable extent, in years gone by, as a domestic remedy for malarial conditions, or infused in whisky as a tonic or bitters. This bark also constitutes a very efficient cure for the tobacco habit. The fresh, inner bark may be chewed, or the powdered bark may be mixed with sugar and extract of licorice, and pressed into a tablet, say of five grains of the bark. These tablets are to be allowed to dissolve in the mouth whenever the desire comes to take a chew or a smoke. The man who made the discovery cured himself, and he was a most inveterate chewer. He also give it to dozens of his friends, with fine results, finally selling his receipt to a large drug house for fifteen hundred dollars. While the remedy is cheap, it is also harmless, and at the same time a fine stomachic, resembling gentian in its action upon the gastric organs.

RETROSPECTIVE DIETETICS.

Regimen in Bright's Disease.—Without questioning the fundamental importance and value of absolute milk diet in Bright's disease, A. Martinet (*La Presse Méd.*, Nov. 13, 1901) observes that clinicians of wide experience have all seen patients do well in spite of the latter's refusal to submit to the dietary rules prescribed by their physicians. This writer recalls the contention of Robin, who believes that vegetarian diet is more potent that an exclusive milk diet in the control of albuminuria. The principle of dietary regimen in renal disease is the reduction of the work of the secreting cells. To maintain nitrogenous equilibrium at least three liters of milk a day must be taken, and, while some patients bear this diet well, it provokes in others gastric dilatation, fermentation, toxemia, and loss of strength. When disturbances of digestion follow the tentative resort to milk diet, the latter may wisely be abandoned for a more liberal regimen; the general condition of the patient, and not the quantity of albumin in the urine, becomes

the guide to treatment in such cases. In acute nephritis absolute milk diet may be regarded as essential. In chronic cases, the following plan is proposed: Begin with milk exclusively, and watch the urine; usually the albumin will first increase, then diminish, then remain stationary; now add vegetables, and study the albuminuria quantitatively as before; when variations cease, try meats cautiously, again studying the albuminuric curve. Ultimately that diet is adopted which minimizes the albuminuria, whether it be purely lactic, lacto-vegetarian, or lacto-carno-vegetarian.

Fruits for the Sick.—There are many times when the sick should not eat raw fruit, but can take cooked fruits. Any and all fruits may be cooked—and in many different ways, all attractive. Compotes are fresh fruits stewed; they are usually made by first making a syrup of three and one-half cups of sugar and two and one-half cups of water, and boiled five minutes. The time must be counted from the time it actually begins to boil. When it is boiling, drop the fruit in carefully, a few pieces at a time, so that they will not break; cook until tender, but firm enough to keep their shape; remove with a skimmer; arrange daintily on a dish, then boil down the syrup until thick, then pour it over the fruit. Let it cool before serving. Apples, pears, peaches, apricots, and oranges may all be cooked in this way.

Dietetic Value of Sugar.—The advantages of sugar as an article of diet, apart from its palatability, says the *Pacific Medical Journal,* reside in the ease with which it is digested and absorbed, the completeness with which it is consumed in the economy, and its potentiality in generating heat and energy and in repairing waste, as demonstrated both experimentally and practically. It may prove of value as a food in cases in which the nutrition is impaired, especially in the presence of simple marasmus, anemia, tuberculosis, and the state of malnutrition in those who inherit a predisposition to tuberculosis; during convalescence from various diseases; also in growing boys and girls, and in the aged. It should not, if pure, injure the teeth, provided hygiene of the mouth is observed. Its use is contraindicated in the presence of diabetes, and in the glycosuria of gout in the obese.

Salt as a Factor in the Causation of Cancer.—Dr. J. Braithwaite's theory as to the causation of cancer is as follows: (1) Excess of salt in the diet is one of the four factors which originate the disease. It is the essential factor, but it is inoperative without at least one, and probably two, of the others. Excess of salt may arise from individual taste, from salt meat, or from too much meat. (2) An over-nourished condition of body, from more food than is required. (3) An impure condition of body, owing to non-use and non-oxidation of food. (4) Some local irritation or stimulant, such as friction from the stem of a pipe or ovarian stimulation.

Decay of the Teeth from the Use of Roller Flour.—At a recent meeting of the British Dental Association, T. G. Read argued that decay of the teeth was caused by chemical changes which take place in the mouth during the mastication of bread composed of roller flour. He contends that the increase in dental caries during the past forty years has been due to roller milling having largely replaced stone milling, and he argues that modern bread itself directly causes the destruction of tooth tissue, as there is a greater amount of acid generated in the mouth during the mastication of bread composed of roller flour than when composed of stone-milled flour. It is asserted that wherever the roller mill is in operation carious teeth are found, instead of the sound ones of the days of the stone mill. It has been noticed that in various parts of the world the natives in the interior have better teeth than those in the towns and those near the coast, and it was found, on testing for acid, that the roller-flour-bread bolus was much more acid than the other. Hugh Candy, chemist to the London Hospital, having tested both kinds of bread, reported that he found in the case of bread composed of stone-milled flour that the acidity remained stationary, whereas in the case of bread composed of roller flour mastication appeared to promote an increase of 43 per cent. in the acidity. After a long discussion, it was agreed that Mr. Read's paper ought to receive the careful consideration of the profession.

Chocolate as a Food for Children.—Reinach (*Münch. med. Woch.; Phila. Med. Jour.*) has made a series of experiments npon two children, one of six and one of nine months, with Von Mering's preparation of chocolate, which is supposed to act as a substitute for fat in the nourishment of children. He found that the fat was well absorbed, and a very small proportion of it reappeared in the feces, and that the children increased very rapidly in weight. The indications for the use of chocolate are those that seem to interfere with the use of the fat constituents of milk, and in cases where the nutrition demands an excess of carbo-hydrates and fatty substances. Then it is useful in cases of acid dyspepsia, in cases of fat dyspepsia, in cases of chronic enteritis, in cases in which the bodily weight does not increase with normal rapidity upon the ordinary diet, and in rachitic and scrofulous children. He reports a number of cases showing how rapidly the weight increased.

Diet in Smallpox.—According to N. S. Davis, Jr., anorexia, thirst, and vomiting are noteworthy symptoms at the onset of this malady. Vomiting is usually not of frequent occurrence. Cool drinks should be given; indeed, water should be administered freely in all stages of the disease, both because it adds to the comfort of the patient and because it will help to avert nephritis, which is an occasional complication. Febrile albuminuria is common. A liquid, non-albuminous diet will lessen or stop it. During the febrile stage a liquid diet, such as is usually prescribed in acute fevers, should be given—milk, broth, gruel, etc. Often the mouth and throat are so sore from the eruption that swallowing is difficult. Food must then be given in small portions at a time. Ice and ice-cream are often grateful to patients at this time. Sometimes swallowing is so painful that rectal alimentation must be resorted to. It should not be relied upon longer than is absolutely necessary, for when suppuration takes place upon the skin prostration develops rapidly, and is often very great. It is, therefore, necessary to give food by the mouth as steadily and in as large quantities as possible. Rectal alimentation must occasionally be utilized in order to help maintain strength when the stomach will not tolerate or digest food enough. Milk should be the staple article of diet. Gruels, weak tea, Mellin's food, farina, and similar articles may be employed for variety. If there is no albuminuria, or if it is only trifling and transitory, bouillon, broths, raw or soft-cooked eggs, custards, and such dishes may be used. If digestion is fairly good, as it is in mild cases, milk toast, soft-boiled rice or oatmeal, cornstarch pudding, blanc mange, gelatin jellies, finely-mashed potato with meat-juice squeezed upon it, may be given, and will be relished. In the severer cases these articles may be given only during convalescence.

Why Some Mushrooms Are Poisonous.—The *Lancet,* in an article on the subject of mushroom-culture, says: The mushroom is a very low order of organization. It flourishes on old manure heaps, and is capable

of taking up a large amount of the material from which it derives its existence. Clean and carefully-handled manure, with a fair amount of old sod and earth, grows healthful plants, but in some large cities garbage and filthy matter of all descriptions are used in the preparation of the beds. Microscopic investigation has revealed the fact that the cap of the mushroom is so constructed that it can absorb from the manure vapors which are dangerous poisons. The little fringes underneath the cap are, therefore, little more than storehouses of poisons. It would be well worth while for consumers of mushrooms to find out from where they receive their supplies, and if other than clean and wholesome materials are used to discard them altogether.

Filtered Water Dangerous.—Says Dr. A. L. Wood (*Diet. and Hyg. Gaz.*, January, 1902): "The domestic filter is a dangerous article of the worst description. People rely upon it in fancied security, while in ninety-nine cases out of every one hundred the water is more dangerous to health and life after passing through it than before. All soluble mineral salts and all impurities of every description, including the deadly poisons from disease germs, which are held in solution, pass through the very best filter at all times, as freely as the water itself, and, unless the filter is cleaned and sterilized several times a day, which is rarely if ever done, the germs of typhoid fever and other diseases multiply with great rapidity within the filter itself and pass through with the water. Many eminent chemists and scientists have testified to the truth of these statements.

Screw-Nails in Fractures.—A. Groves in the *Canadian Practitioner and Review* for January, 1901, (*Medicine*), describes a severe injury to the face with a penetrating wound close to the nose on the left side. Among the other injuries, the left articular process of the lower jaw was entirely carried away, and the jaw was broken on the right side. To keep the fragments in position was difficult, owing to the severe injury of the soft parts. The bones were drilled with the aid of a dental engine, and a screw-nail secured perfect immobility of the fracture. Another case in which this method of uniting bones was employed was that of a fracture of the femur, together with a fracture of the tibia near the ankle joint, with extensive contusion of the leg and a compound fracture of the tibia about the middle. By ordinary means it was almost impossible to keep the fragments in position. In this case screw-nails were used with the best results. He believes that this is an excellent method, not only in recent injuries, but in cases of ununited fractures, where operative measures are required. In his cases he had silver screws made by a local watchmaker, but ordinary iron wood screws answer the same purpose. It is much easier to put the screw in place than to use silver wire, there is less displacement of the soft parts, and the screws hold the fragments firmly, which wire never does.

Absurdities in Antiseptic Treatment.—A paper on "The Personal Elements of Error in Therapeutics," by Dr. George F. Butler (*American Medicine*, January 4, 1902) concludes as follows: "While very potent for therapeutic good, and also for advance in pathology, bacteriology has introduced a serious, dangerous, and mentally lazy personal element of error into therapeutics. Under the influence of the misleading old maxim, 'Stop the cause and the effect ceases,' bacteriologic therapeusis has been pushed to a wild absurdity. This old maxim being a sophism, which is more like truth than truth itself, has created much false science, not only in medicine, but elsewhere. The operation of the primary cause in the universe always sets in action secondary causes, whose effects continue long after the primary effects have disappeared. The conception that it was only necessary to remove the primary cause has so dominated medical and surgical therapeusis that it has become the most adored fetich of the average practitioner. The advent of the germ theory led to a most tremendous use of this excuse by the mentally indolent. Despite the fact that the germ sets in action secondary causes, and that it was itself affected by the culture medium furnished by the body, all that was considered necessary for the treatment of germ diseases was the use of an antiseptic remedy. It is now known that the toxin produced by bacteria is infinitely more serious in its effects than the bacteria themselves. Indeed, it is exceedingly probable that when the toxin is lacking in quality and quantity the leucocyte, unaided, can dispose of bacteria. This is why nearly every healthy mouth contains pathogenic bacteria without evil results. There is reason, moreover, to believe that the destruction of pathogenic bacteria cannot be accomplished without the destruction of non-pathogenic and even useful microbes. The natural bacillus aerogenes of milk is destroyed by sterilization and pasteurization. In consequence, as Bienstock has shown, the anaerobic microbe of putrefaction attacks milk in the human intestine, producing very toxic products. Despite these facts, the treatment of tuberculosis, pneumonia, and all germ diseases on the antiseptic plan is widely urged and much followed. Until the personal element of error arising from the mixture of the misleading old maxim as to causation with wild bacteriologic and antiseptic theorizing ceases to dominate the mind of the average practitioner such absurd treatments will continue to be exploited, especially by persons with a commercial tendency. These elements of error must be eliminated from therapeutics before it can attain the authority which recent advances in chemistry, pharmacology, and physiology justify it in assuming."

THE NEWER TREATMENT.

Points in Influenzal Treatment.—The Various Skin Troubles of Influenza.—Erythema or influenza erythematosa generally occurs with influenza of the gastric type during its acute stage, closely resembling scarlet fever, being a pinkish-blush over the face, chest, and arms, and punctate. The tongue has a thick, white coating, with enlarged papillæ on the sides near the tip, and the skin is moist. Miliaria also occasionally occurs in influenza. Erythema multiforme is also seen in this connection. Alopecia areata has been reported in the journals as a complication. Herpes zoster was observed during the last epidemic by some authority.

Diagnosis of Influenza.—Influenza may be confused with coryza, pneumonia, bronchitis, tonsillitis, neuritis, scarlatina, and rheumatism. Acute coryza and bronchitis show the absence of severe headache, muscular pains, great prostration, and anorexia, although doubtless if these occurred during an epidemic they would be more or less due to it. Again, follicular tonsillitis has symptoms in common with influenza, but may be excluded through the absence of influenzal frontal headache, rheumatic pains, etc., although follicular tonsillitis occurs frequently in influenza.

In the majority of the cases, the disease is self-limited, and there is no question of speedy recovery. When influenza occurs in the old or the infirm, prognosis is less rosy colored. Phthisical patients, comparatively speaking, do not die from its effects, although in other cases they succumb to intercurrent bronchitis. On such diseases as Bright's disease and valvular disease of the heart influenza is more fatal. Deaths due directly in-

fluenza are generally in cases of old age, malignant tumors, and other depressed states.

Treatment.—Rest in bed during the acute stage is all important, and the patient must stay indoors until temperature falls to the normal. They generally will not stay at home until well, but it is important that they should avoid the evening air. Care in regard to their clothing, the wearing of rubbers or overshoes is to be impressed. When the patient is first seen, it is well to open the bowels freely; for this purpose, calomel every two hours until effective, or compound cathartic pills, in one dose, are indicated. At bedtime, quinine and Dover's powders come in good, with a hot whisky punch. For headache, fever, and muscular neuralgic pains, phenacetine, antikamnia, salol, or salicylate of soda, with whisky, one-half ounce, are useful. This treatment will generally be sufficient to relieve the most obstinate cases. Whisky hastens their action, and tends to counteract any depressing effect. In case the muscular pains are obstinate, salol, in large doses, or salicylate of soda, in fifteen-grain doses, three times a day, will generally be sufficient. If great anorexia and weakness is noted, milk punches should be given every two hours, if they are well borne, during the acute stage. But don't persist in their use if the patient complains of their effect. Whisky is the remedy par excellence to counteract the great prostration, and may be taken three times a day throughout the attack. If it is not well borne, champagne, brandy, sherry, or other stimulant can be tried. Quinine is also a standard remedy, and is useful both as an antipyretic and a tonic. During the acute stage it should be given, if the stomach can bear it, in five-grain doses, three times a day, and in the stage of prostration following it should be given, purely as a tonic, in three-grain doses, in combination with nux vomica and iron, in pill or solution.

When there is considerable vomiting, good results have followed a strict milk diet, with a powder of bicarbonate of soda, pepsine, and bismuth, ten grains of each every four hours. If diarrhea is present add one-eighth to one-tenth of morphine to each powder and increase in frequency if necessary. It is well to put all very sick cases on a milk and whisky diet—two and a half quarts of milk and four ounces of whisky a day. In respiratory catarrh, belladonna, camphor, morphine, and quinine, every two or three hours, gives relief. In cases of pharyngitis and tonsillitis an astringent spray or gargle can be added. When the laryngeal and tracheal symptoms are most pronounced, inhalations of tincture benzoin comp. afford relief.

In bronchitis of the asthmatic form, with a spasmodic cough, a mixture containing belladonna and morphine is excellent. A preparation of codeine, gr. one-sixth; ammon-iodidi, gr. 3, every three hours, is also very valuable in the treatment of this bronchial condition.

In bronchitis, followed by abundant secretion, the muriate of ammonia or more stimulating expectorants are indicated. If genito-urinary trouble appears, place the patient on milk and Vichy diet, and confine them to the house. Complications should be treated as they arise, and digitalis and strychnine should be given where the heart action is weak, to prevent heart failure, as influenza is a depressing disease. In the nervous prostration which follows influenza, a tonic consisting of the phosphates, with quinine, iron, and strychnine should be given. The phospho-muriate of quinine (Phillip's tonic) is excellent in these cases, or a combination of the tincture of nux vomica with nitro-muriatic acid—dispensed after standing a day, to allow the chemical change to take place.

Eliminating the Possibility of Pelvic Disease in General Practice.—Gynecologists have been attacked for their ingenuity in tracing all female ills to some pelvic disease. Many neurologists have traced long series of severe and complicated nervous symptoms to gynecological treatment in years gone by. The reaction has set in, and now the swing is the other way. The gynecologist has been scolded and lectured. But sometimes a series of cases leads the gynecologist to feel that he, too, can utter a note of protest to the general practitioner and the neurologist, for valuable time is often lost and strength wasted through useless efforts to overcome a distressing disorder, or through the general treatment of a protracted fever, in which the casual relation of a deep-seated pelvic trouble has not been recognized. In the old days when uterine displacements were regarded as the bases of nearly all pelvic disease, the general profession became sceptical as to the rôle played by pelvic disease, and stuck to general therapeutics in chronic female disorder.

The intimate connection of the uterine apparatus with the brain, heart, lungs, stomach, and entire alimentary canal, and of its subtle influence on the vasomotor and trophic nerve centers, is now well recognized and the possibility of a pelvic lesion in any disease which does not quickly respond to a careful general therapeutic treatment must be considered.

The criticism of gynecologists for pelvic examination of young girls, and the advice to treat the general condition by surrounding the girl with all the hygienic advantages, and to let Nature alone, is often unfounded. The possibility of growing pelvic disease gaining control of the sympathetic nervous system, weakening the digestive and muscular system, is far more irreparable than any possible injury which might result from a properly conducted pelvic examination. The following case illustrates our point well. It is as follows: A young woman, aged twenty, had been a great nervous sufferer for three years. The origin of the trouble seemed to have been a severe fall, resulting in an obscure injury to the spinal cord. She had constant headache and backache, increasing in severity, great mental apathy, insomnia, and frequent hysterical convulsions. She had been treated during all the time by general practitioners, with little or no improvement. No pelvic exploration had been made. An endometritis, with a left salpingitis and some thickening and contraction of the left broad ligament, drawing the uterus backward, was found. The patient entirely recovered her health within a few months, but with the loss of these "white bread and butter" years of her life.

Another girl, seen after she had been wandering from other physicians for years. Gastric irritability existed, from which for weeks at a time she vomited the food ingested. All sorts of treatment, including climatic changes, and regular use of the stomach tube did not check progressive emaciation and loss of strength. A pelvic examination showed the existence of an endometritis, which was treated by aseptic curettement and relieved. The stomach then responded to treatment formely used in vain, and the patient regained flesh and strength.

Another case is reported, as follows: A married woman of forty years of age, the mother of four children, had spent eight years of invalidism, under the care of a well-educated physician and surgeon. She was a neurasthenic, put to bed for several days by any little domestic excitement, suffering several times a month with violent headache and nausea, lasting from forty to seventy hours, quite unable to endure the noise of her nursery, and haunted with a constant dread of insanity.

She was treated with tonics, sedatives, and stimulants, including bromides, phenacetine, brandy, and, finally, with increasing doses of morphine.

A subinvoluted uterus, with granular endometritis, was found, and old lacerations of both cervix and perineum. Gynecological treatment and operative measures relieved her, so that she had absolutely no headache, no gastric trouble, no nervous irritability, and no mental anxiety afterward. Rest and good food completed a brilliant cure, which might have been attained years before had not the pelvic disease been overlooked.

A middle-aged woman was the next patient. At fifteen years of age she had what the doctor called an "abscess of the ovary," although he made no examination. She made a poor recovery from the attack, and had other attacks similar to this before marriage. At twenty she was married in her bed, being too sick to stand during the ceremony. She has been an invalid ever since, unable to do her housework or to enjoy social life. Last January she had an attack of peritonitis, ending in a rectal fistula that has been discharging large quantities of pus ever since. She has been treated for years for gastralgia and nervous prostration without benefit. A large exudate filling up the cul-de-sac and embedding in it the uterus and appendages was found, with a fistulous opening high in the rectum discharging daily two ounces of offensive pus. These pathological findings easily explain the years of suffering spent under the physician practising general medicine.

A number of cases have been published during the past few years in which appendicitis was found and relieved by surgical measures after several weeks of fever diagnosticated as typho-malarial fever. Byford, in a lecture on tubercular diseases of the Fallopian tubes and peritoneum, stated that in two cases of supposed typhoid fever of over two months' duration, to which he had been called in consultation, he had found tubercular disease of the tubes ascribed to typhoid fever.

Pelvic diseases show a wide and varied symptomatology, by reason of which they may simulate various general and nervous disorders; grave errors in diagnosis can be made through neglect of a thorough examination of the case, especially of the pelvis, thereby entailing upon the patient prolonged suffering and even death. It is far better to make an unnecessary gynecological examination than to incur the risk of a mistaken diagnosis. The proper examination can be made if properly managed by the tact of the attending physician.

Acromegaly and Giantism.—One of the most interesting reports on acromegaly ever published was the autopsy performed on a giantess by Dr. Hutchinson, of Des Moines, Ia. It seems never to have been published in the medical journals, or at least has escaped general attention, so it is reported here: About the middle of February, 1893, "Lady Aama," a French giantess, was brought to Des Moines, to be exhibited in a dime museum. A week or so later, she was taken ill, and on the 27th of the month her death was reported. Negotiations were opened, and her body was secured for the museum of the State University of Iowa City, and an opportunity was thus afforded Dr. Hutchinson for examination.

"Lady Aama" had been advertised to be "over eight feet" in height, but this was, of course, recognized as merely the "regulation stature" of all giants thought worthy of an introduction to the public. Her real height was 6 feet 7¾ inches, though possibly it might have exceeded this slightly during life when the arch of the instep would be better supported and the intervertebral disks unshrunken.

Her birthplace was on the slopes of the Jura, in France, her age being seventeen years. The cause of her death was given as "quick consumption," which had lasted for only six months or so, although on more careful inquiry it was found that she had been failing gradually in strength for some five years past, and had died quite suddenly—she was exhibited within three days of her death—in what appeared to have been an attack of la grippe, or of acute bronchitis, death occurring from syncope after a severe fit of coughing. She suffered very little pain during her illness, and the muscular weakness was so extreme that for weeks before her death she was obliged to support herself, when standing, by holding on to an upright rod fixed in the floor.

Her death seemed to be due to a general state of collapse, hastened by an acute coryza. She was the fifteenth child of a poor laborer, all the others being of normal height. She was still increasing in height up to the time of her death. Her intelligence was poor, but in no way abnormal. The body was extremely emaciated, and the first thing which arrested the attention was the apparently small size of the chest and trunk, as a whole, compared with the greatly elongated extremities. This, of course, was merely in accordance with what is the rule in such cases, viz., that the increase in height in giants and the decrease in dwarfs is principally in the limbs, the body generally being comparatively near the normal standard in both instances.

The measurements revealed that the length of the lower extremities from the top of the great trochanter to the lower border of the os calcis was 47 inches, or nearly 60 per cent. of the total height, while the mid-point of the latter usually lies about an inch below this level—upper border of symphysis. According to Blance's canon, as followed by the ancient Egyptian artists, the length of the lower limb from this point should be ten-nineteenths of the entire height, which, in Aama's case, would be 41⅔ inches, or 5⅓ inches less than the actual measurement. The same was found true of the arm, which, by the same canon, should have been eight-nineteenths of the total stature, 33½ inches, but actually measured 37 inches.

The same relation is found to be carried out in the measurements of the bones of the chest, the sternum measuring 8¼ inches, or barely a quarter of an inch longer than that of the average adult male (Duval), and the clavicle 7 inches, or only 1 inch above the same standard. The extent to which the excessive height consisted of length of limb can be seen by comparing Aama's lower limb with that of the average of her race, which would be ten-nineteenths of 5 feet 5.2 inches—31.3 inches—a difference of 12.6 inches, or nearly three-fourths of her total excess of height.

The next noticeable feature was the disproportionate size and peculiar shape of her hands, feet, and lower jaw. Her hand, instead of being, according to the artistic canon, one-tenth of the total height (7.9 inches), was actually 11.25 inches in length, or nearly one-seventh of her height, and of a peculiarly "spade-like" shape, with long, square-tipped fingers, of uniform breadth throughout their length. The foot, instead of three-nineteenths of the height (12.6 inches), measured 13.75 inches, while not only the jaw, but also the nasal bones, were decidedly enlarged.

The skull proper was barely above the average size, measuring 21⅛ inches in circumference, as compared with the normal female skull of 20 inches.

Nothing above the pubes indicated the sex, the mammary glands being almost completely absent, and the circumference of the chest being only 2 inches less than that of the hips (39 inches). The nipples were flat and

small, and upon dissection a mere trace of gland tissue and of a suspensory ligament could be made out. The integument of the body was thickish and earthy-looking, but not otherwise abnormal, and the hair of the scalp was thin and sparse, but of normal length.

The autopsy showed that the emaciation was extreme. The heart was slightly above normal size. Lungs were normal, except in size, which appeared below the average. Spleen was greatly enlarged, and weighed 2 pounds. Kidneys were normal, capsule being non-adherent. Liver was slightly enlarged, but otherwise healthy. The suprarenals were enlarged.

The thyroid gland was normal in size and appearance. The brain was pale and sodden-looking, but, owing probably to the fact of its being impossible to make an autopsy until nearly a week after death, in such degenerated condition that it was difficult to remove it entire. This was especially marked at the tip of the left temporo-sphenoidal lobe, which was removed as a putty-like mass of débris. From the same cause the pituitary body, which was greatly enlarged, was torn across in removing and its form and outlines completely destroyed. The weight of the brain (after hardening in alcohol to permit of its handling) was 36 ounces or 8 ounces below the average of the female.

The lateral ventricles appeared somewhat dilated, the tip of the anterior horn being enlarged and rounded and the cavity of the third extended down into the infundibulum. There were no hemorrhage patches and the membranes were healthy, the thickening and compression backward of the temporo-sphenoidal lobes causing the anterior third of the fissure of Sylvius to run almost vertically and the uncinate gyrus to project internally.

The most striking abnormality was found in the generative organs. The mons veneris and labia majora were flat and poorly developed. The clitoris was nearly half an inch in diameter and extremely prominent and with the large clitoridal folds, 1½ inches in length, presented no very fanciful resemblance to a small and imperfectly developed penis. Reports were circulated during "Aama's" lifetime that she was an hermaphrodite due to this peculiarity. The vagina was small and straight, barely capable of admitting the fore finger. The uterus was 1¼ inches in length and two-thirds inch broad—about the size and shape of the last joint of the little finger and weighed 2 drachms. The ovaries were small granular looking masses about the size of the finger nail, adhering to the posterior surface of the broad ligament.

The bones were macerated and cleaned, but such was their spongy, crumbling condition that it seemed doubtful whether they were firm enough to hold the wires and support their own weight. The whole osseous system appeared to be in a condition of osteo-porosis; a touch would dislodge the teeth from their sockets, the ribs and slighter bones would snap across at the slightest strain and the epiphyseal plates upon the bodies of the vertebræ could be lifted off with the finger. In fact it literally appeared as if there was no more actual osseous material in this gigantic skeleton than would be required to make a sound, firm, bony framework of the average size. The bones, though much larger, were very little heavier than normal, the radius, scapula, and fibula, for instance, being found to exceed the average of healthy bones in weight only 10 per cent.

Dr. Hutchinson called this case one of acromegaly on the following grounds: (1) the excessive development and peculiar shape of the hands, fingers, feet, jaw, and nasal bones. (2) The hypertrophy of the pituitary body and enormous size of the pituitary fossa. (3) The history of mental deficiency and long-standing progressive failure of strength, ending at last in death by syncope.

The enlargement of the pituitary body would appear to be the principal pathological characteristic of this disease, as it has been found to be present in ten out of the twelve cases hitherto reported in which autopsies were held. Its probable size in this case would appear to conform pretty closely to the average hypertrophy as reported, which ranges from 1 inch to 1¼ inches in antero-posterior and 1⅕ inches to 1⅔ inches in transverse, the diameters of the pituitary fossa here being 1¼ and 1½ inches, respectively.

Of course, the interesting question suggests itself at once—what connection, if any, exists between the acromegaly and the giantism? and although the facts at our disposal are so few that any speculation upon the subject must be purely tentative, yet one is tempted to string them together.

In the first place it is interesting to note that giantism as far as accurately recorded would appear to be actually mainly an "acromegaly" extending to the whole extremity (both upper and lower) instead of merely confined to the last segment, the lower limb contributing such a large proportion of the excess in height. An approach to this condition even is recorded in cases of acromegaly occuring in adult life, in which not only the hand but the forearm was enlarged.

Arnold reports a case where the shoulder-girdle was thickened and Berkley one where the clavicles were enlarged. Dercum records another where both forearms and legs and chest were greatly enlarged. The scapula and pelvis were enlarged in Osborne's case, the forearms, patellæ and clavicles in Pel's case, and the forearm and legs in Long's. The bones of the leg were thickened in Pechardre's case. In the four instances above where the weight was given the average was 215½ pounds.

Then, again, the picture of the giant given almost unanimously by secular non-romantic literature is that of a loose-jointed, weak-minded, stoop-shouldered sort of a being with splay feet, huge hands, and projecting features. The mental condition of the giant has been noticed by the author who wrote that "Nature never put her jewels in five-storied garrets."

The condition itself appears to be a diseased one, as the vast majority of these "freaks" die young, and from all the records obtainable few pass middle life. We must remember that the actual range in human stature, even in giants, is much more limited than is popularly supposed, or even than is usually assumed by most of us. Popular literature abounds with 9-foot and 10-foot men, but statures above 8 feet are extremely rare, and Du Quetclet even declares that the tallest man reliably recorded was Frederic the Great's "Scottish giant," who measured 8 feet 3 inches. "Chang," the Chinese giant, was only 7 feet 8 inches in height, and Patrick Cottor 7 feet 10 inches, while the majority of "giants" actually barely reach 7 feet, and it does not seem at all incredible that the same nutritive disturbance which can add an inch to the hand or jaw of an adult can literally "add a cubit to his stature" if beginning its operation during the fœtal or infant life. In adult life the increase merely occurs at the points of least resistance, the ends of the extremities and features, or, as Klebs asserts, the ends of the long bones.

The situation of the characteristic pathologic change in the pituitary body is in itself extremely interesting and suggestive from an embryonic point of view. Little as is known of the function or physiologic relations of this "gland," it is generally regarded as marking the point of junction of the spinal and alimentary canals

(neurenteric canal) and termination of the notochord. This makes it the "uppermost" end of that neurenteric loop which bounds the stature of the embryo and thus developmentally the "highest" point in the body, so that one would almost expect upon *a priori* grounds to find at this point marked traces of any nutritive disturbance affecting the length and size of the body or appendages.

The connection becomes still more suggestive if we accept Beard's ably supported view that the pituitary and pineal bodies together with the pineal "eye," in Natteria, represent the remains of the primordial mouth opening axially (from which the present mouth and pharynx are a secondary development laterally) and around which the encephalon developed after the fashion of the esophageal ganglia in Mollusks and the "esophageal nerve-dollar" in Crustaceans to reside over the structures concerned in securing food materials.

As this is at the bottom of the primary and essential function of the extremeties (including the jaws) we should hardly be surprised to find their nutrition in some way presided over or represented in this region. Would it not appear probable that at least one form of giantism is, as Hutchinson points out, merely acromegaly beginning in fœtal or infant life?

A Case of Myelitis with a clue to Origin in a Carcinoma of the Breast.—The patient is 40 years of age. Her family history is fairly good with the exception of a large percentage of paralytic troubles. Her father died of paralysis and a cousin was paralyzed on reaching manhood. She has a brother and sister living in good health. She has suffered since two years with a disease of the spinal cord which has produced complete paraplegia.

Her childhood was perfectly healthy. She has no uterine abnormalities and has had four normal labors. Two years ago she was taken with a sudden and very intense pain in her back in the lumbar region with a simultaneous incontinence of urine and fæces, the degree of which incontinence has since seemed to be correlated with the intensity of the attacks of backache. She is now entirely confined to bed, with entire loss of motion, of the sense of touch or temperature in the lower limbs and complete incontinence of urine and fæces, suffering constant and severe pain. Her daily record shows a normal temperature, an exhilarated pulse varying from 100 to 112, a poor appetite, no headache, bowels constipated. The physical examination is interesting. The knee jerk is here diminished, whereas, as a rule in paraplegia, after the shock has passed off the knee jerks are increased.

Ankle clonus is present on the left side but is soon exhausted. The great toe is extended on tickling sole of foot and these reflex acts increase the pain.

The right breast shows a carcinomatous tumor which is hard to the touch and gives a most interesting clue to the cause of this disease. Cancer of the breast is more prone to vertebral disease than cancer of any other region. The paraplegia is here considered as secondary to the carcinomatous condition of the breast. There has been a carcinomatous infiltration of the vertebræ which has given rise to the inflammation which has caused the paraplegia. Although the patient has no power of motion in the lower limbs nor any sensations to touch, yet she suffers continued intense pain in them. We have here a condition of anesthesia dolorosa comparable to the cases frequently seen of a patient having sensations in an amputated limb, the sensory fibres in the cord continuing to do their work for the regions to which they were formerly distributed. The area of anesthesia may be distinctly limited by a sharp line or the dividing line may be gradual. In this case the prick of a pin is felt above the upper rim of the umbilicus, but below that it can not be detected. The patient's back is very tender and some paresis of the left side is noticeable. She is unable to put her left hand to the top of her head, but still has the entire use of her right hand, the grip of which is much stronger. The myelitic process seems to be extending upwards. There is no atrophy of the limbs, no trophic eruptions, no bed sores. The prognosis is most unfavorable and the treatment a free use of narcotics to assure the patient as much comfort as possible.

Ten blind physicians, it is said, are active practitioners in the United States.

Harvard Medical School now has nearly $3,000,000 available for its uses, including $250,000 for the C. P. Huntington Laboratory of Pathology and Bacteriology.

Dr. J. Edwin Russel, of Brooklyn, desires us to refute the recent newspaper statements connecting his name with certain sensational propositions, which had no foundation in fact, and he brands them as absolutely and unqualifiedly false.

The city authorities should be very careful how they attempt to dispose of Blackwell's Island, as citizens generally are in favor of retaining it for the purpose now used. It is a great saving to the city in transportation to have its institutions so near, and the natural barrier of water is much cheaper and better than any stone-wall. These are important items which should not be overlooked, and there are others.

Mr. Edward Tuck, born in Exeter, N. H., a wealthy Bostonian, resident in Paris for twenty-five years, will defray the entire expense with endowment of a free hospital for Americans in that city, to be called "Franklin Hospital." It will be built on the latest American model and managed by American physicians and nurses. Why not an American hospital in Paris as well as a French hospital in New York?

New York Medical Journal tells of a truly remarkable operation by Nicholadoni—transplantation of a toe. The second toe of the right foot was used to replace a thumb, lost by an accident, cut in a trapeziform manner. The extensor tendon of the second toe was united with the stump of the extensor longus pollicis. By silver sutures the phalangeal stump of the thumb and the first phalanx of the toe were united. The flexor tendons of the foot were united to each of those of the thumb. The result was good. Sensation and motion were slowly returning at the time of the report.

Prof. Alexander Winchell is credited with the invention of a paste that will stick to anything. Take two ounces of clear gum arabic, one and one-half ounces of fine starch, and one-half ounce of white sugar. Pulverize the gum arabic, dissolve it in as much water as the laundress would use for the quantity of starch indicated. Dissolve the starch and sugar in the gum solution. Then cook the mixture in a vessel, suspended in boiling water, until the starch becomes clear. The cement should be as thick as tar, and kept so. It can be kept from spoiling by dropping in a lump of gum camphor, or a little oil of cloves or sassafras. This cement is very strong, indeed, and will stick perfectly to glazed surfaces, and is good to repair broken rocks, minerals, or fossils. The addition of a small amount of sulphate of aluminum will increase the effectiveness of the paste, besides helping to prevent decomposition.

MISCELLANY.

—It has been decided by the authorities in Victoria that a sick voter can record his vote by post.

—Chronic rheumatism is greatly benefited by hypodermic injection of colchicin near the affected part.

—New York street cars have no protection for their motormen from the weather, and in stormy weather it seems brutal.

—The French Government has appropriated 100,000 francs to defray the expenses of an expedition to the United States, for the study of yellow fever in this country.

—Numerous experiments to determine the best fire-resisting materials for the construction of doors have proved that wood covered with tin resists fire better than an iron door.

—In locomotor ataxia, an important symptom, the *Indian Medical Record* says, is a band of tactile anesthesia, more or less complete, around the chest, at the level of the nipple.

—Naples is to have sea baths capable of accommodating 40,000 persons. They are to be supplied with hot and cold water, so that they may be enjoyed at all times of the year.

—Fifty thousand dollars has been donated to the Royal Hospital by Alfred Harmsworth, of the London *Daily Mail*, for the purpose of installing a plant for the electric light cure of lupus.

—Ozone, which proves of value in many respiratory diseases, can be obtained extemporaneously, Stockwell says, by taking a bunch of ordinary friction matches, tying them together, dipping in water, and suspending from the ceiling in the center of the sick-room.

—The *Medical Record* says that the managers of both political parties in Maryland have purchased many gross of spectacles for use on election day, and have employed men to fit glasses to those who are unable to decipher the names of the candidates in the ill-lighted booths.

—The first patent medicine, it is said, ever put up for sale in America was a proposed cure for tuberculosis. It was called "Tuscarora Rice," and was compounded and sold by a Mrs. Masters, who erected a large establishment for its manufacture in New Jersey, about 1711.

—*International Journal of Surgery* calls attention to a very important point, viz., that little children should never be operated on during very hot weather if the surgeon can choose his own time. They are very apt at this time, however carefully they are fed, to develop a severe form of intractable diarrhea.

—A building, 31 x 62 feet in size, is to be erected at the Pennsylvania Hospital for the Insane as a swimming pool for the woman's department. The building will cost 18,000, and is one of the many improvements for bettering the condition of the insane, for which this hospital has become justly famous.

—According to the *Journal of Medicine*, a man placed under arrest for illegal practice of medicine, claiming to be a graduate of an American college, presented a diploma which excited suspicion. The Roentgen rays revealed the outlines of a name erased to make room for that of the man who was thus convicted.

—The Italian neurologists and alienists in Congress assembled at Ancona, in October, adopted the following classification of mental diseases as best adapted to statistical purposes: (1) Congenital psychoses; (2) acute and simple; (3) chronic, primary, and consecutive; (4) paralytic; (5) accompanying a neurosis; (6) toxic, and (7) infectious.

—One-sided breathing was recently recommended by a quack in Koenigsberg, Germany, to patients suffering from tuberculosis, so as to give rest to the lung involved. This, he gravely announced, could be readily accomplished by stopping with the finger the nostril on the side affected, a patient whose right lung was affected breathing through his left nostril, etc.

—It frequently happens that ice cannot be obtained for the sick-room. In such an event, it is only necessary to procure a pitcher of cold water, and place about it a towel soaked in:

℞ Ammonium nitrate.....2 oz.
Water .....1 pint.

Within half an hour very cold water will be on hand, ready for use.

—According to an exchange, a society has been formed in Paris to promote the establishment of combination milling and baking houses in all the large French towns. It has for its object the production of 100 kilogrammes—220 pounds of nutritious, digestible white bread—from 100 kilogrammes of grain, at the lowest cost, made by the Swiss system. Official analyses made by the National Agronomical Institute, and by the municipal laboratory of Paris, show that Swiss bread contains more nutritive nitrogenous properties and more phosphates than ordinary bakers' bread.

—In a Russian medical journal, Dr. G. Tatevosoff draws attention to the excellent service which may be obtained from the ordinary snuff tobacco, as a means for cutting short hiccough. He relates an instructive case of a patient with some chronic chest disease, accompanied by violent cough attacks, in whom the latter used to be followed by extremely obstinate hiccough. The common remedies (including cocaine) failing to exercise any controlling influence on the most distressing symptom, Dr. Tatevosoff at last decided to give a trial to the said old-fashioned popular means, making the patient on each occasion thoroughly snuff into his nose a pinchful of the powder until the appearance of lively sneezing. From the first *séance* the effect was truly brilliant, the hiccough subsiding as if by magic. Under the influence of the simple remedy the attacks steadily became milder, and ultimately vanished, though the patient's cough remained as intractable as ever.

—A Cesarian section in a girl of thirteen years is recorded by Dr. Clarence Webster, of Chicago, in *American Journal of Obstetrics*, February, 1901. The patient was American by birth, and apparently of weak intellect. She was in the eighth month of pregnancy. The bony pelvis was of the justo-minor type; the true conjugate measured 9.2 cm., or 3½ inches. A sudden attack of flooding came on, the umbilical cord had prolapsed, and the membranes ruptured. The cervix was reached with difficulty, and was found dilated to about the size of a silver dollar. It was filled with blood-clots, which extended upward into the uterine cavity. The vagina was small and resistant, and allowed of no obstetric maneuver. The urgent condition of the patient, and the complications, made Cesarian section necessary; turning would have been impossible, and the tissues of the cervix were not relaxed as at term. Rapid dilatation could only have been carried out at the risk of severe laceration. The patient made a good recovery.

ORIGINAL ARTICLES.

COMPATIBLE MEDICATION, OR THE PHYSICAL FORCES IN SCIENTIFIC FORMULATION.

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PART II.

LIGHT is the visible expression of heat. It is by the all animal and vegetable life. Light in the plant aid of light and heat that energy is carried in to aids the chlorophyl bodies to split up the carbonic acid into carbon and oxygen—the oxygen remaining free and the carbon differentiated into vegetable starch.

In the animal body the hematoporphyrin of hæmoglobin differs only from the phylloporphyrin of chlorophyl of the plant in the chemical formula by three more atoms of oxygen. It is acted upon in exactly the same manner and the product is glycogen or animal starch, a substance of great physiological importance, having the formula $C_6 H_{10} O_5$, and is found especially in the form of scales and particles in the protoplasm of animal cells, the same as vegetable starch in the protoplasm of plant cells.

Can we by the same laws governing the eternal passivity of nature deduct by analogy that the same process will account for the power of reproduction in organized beings? Formation and transformation is represented in the eternal passivity of nature in which there is no direct evidence of reproduction unless formation and transformation be taken as that process in the evolution of species after life manifests itself.

The synthetic generators are the first builders—the lowest order of units possessing the power to transform the inorganic into the organic. The lowest order of reproduction is manifested by the units imbibing and transforming the matter of their environment.

In going back to the way in which organization originated it is merely retracing the same steps to the level of the inorganic to again ascend to the height of forming the cell. The way in which reproduction takes place is by first forming the thing by nature, then transforming it again, which process constitutes reproduction. Unless the cell retraces its steps to where it originated, reproduction could not take place. In order for the cell to possess such power it must transmit the same influence which is of like nature to that which produced the cell in order to form an exact prototype. If this were not the case each cell could form independently of any influences derived from pre-existing cells.

There is necessarily some energy stored by the cell in its synthetical upbuilding, but it gives off more than it stores, hence the necessity for furnishing energy to the functionally weakened cell in disease. This should be done by medicine rich in the potentialities necessary to the cell's existence. Non-compatibles would here act like the thief breaking into the house at night, a stimulus to energy already exhausted, with its inevitable reaction. The compatible is the welcome friend, the good Samaritan.

The synthesis of upbuilding is again shown by the splitting up of sulphuric acid into an etherial sulphate by subdivision of its molecules. This can be done in the laboratory. When the means and method of this etherial splitting up process is fully understood, medicine becomes a science and the physician master of disease.

The impetus to disease is the perversion of the forces which cause normal differentiation. Physiological differentiation is the process of development in utero. There is pathological differentiation in every type of disease.

The potentialities direct chemical and physical transformation by the aid of ferments, and as the potentialities cease to act there is a corresponding deterioration of tissue, rendering it less qualified to sustain life. As food supplies only energy by administering to chemical activity, and as metabolism is sustained by heat and nitrogen,* it is evident that to increase chemical and physical transformation the potentialities must be administered to. This can be done by aiding nature in using those elements originally selected by her in body formation—in formulating to the cell requirement. This it is possible to do, and the formulæ accompanying this paper, to a certain extent, illustrate this fact; but it is not claimed that detailed perfection is arrived at. The results obtained from trials of these formulæ will prove that a step in the right direction has been taken.

Formation and transformation is accomplished by combustion and motion due to the action of the potentialities. Motion is both a cause and a consequence of heat. Heat is a cause of motion, but not a mode of motion.

Combustion is the consequence of heat and motion. In the absence of motion there can be no form of reduction. In Lecithin, the forerunner of the nucleo compounds, the formula of which is $C_{44}H_{90} NPO_9$, we have the potentialities stored in the form of heat, light, electricity and magnetism, mechanical power being manifested during the activities of these potentialities.

Disease could never arise unless some alteration took place either in the matter of supply in the form of nutrition or from metabolic activity of each particular cell being altered, and as the normal functionality of the cell is dependent on harmonious activities of the potentialities pent up in it, is it not reasonable to suppose that normal functionality may be reinstated by administering to the potentialities, using those means originally selected by nature? The power or the ability to appropriate is the measure of the chemical energy left in the body after the transforming influence of the potentialities has become exhausted, to act upon the remedies taken into the body for disease. The tissue changes going on during the elevation of temperature are responsible for many of the degenerative changes manifested after a reduction of the temperature to the normal.

When the oxygenating capacity of the system is exceeded as in uric acid formation, tubercle, pneumonia, etc., is it not wise to support combustion and motion by chemical interchange?

Again, as seen in fevers where the results of burning of tissue by oxygen, evidenced by excess of the ammonio-magnesium phosphates, is it not wise to give study to the action of the potentialities instead of to matter, and to aid in restoring the normal and so arrest the speed of burning? The cause of fevers is the non-elimination of carbonic acid gas from the body; its retention producing putrescence of the fluids; their toxic influence acting upon the nerve centers diminishing the activity of nutrition and produce a comatose state. The recovery comes from the elimination of the contained impurities and the return by resolution of the tissues to the normal

* The writer believes that nitrogen is the originator of locomotion, as in its absence it cannot be made to take place. It possesses great electrical potentiality. The respiratory process probably originates by its rhythmical explosion. It is the most powerful essential to the movement of all bodies. The nitrogenous compounds used in medical treatment are directed to the central nervous system, and if it is these nerve centers that originate the incentive to locomotion, intrinsic motion arises and is sustained by the nitrogenous series combined with the carbohydrates.

state. Nutrition is decreased at the expense of the metabolic increase of cellular activity. The enormous amount of urea gives evidence of the metamorphic changes in the tissues. This does not mean increase of nutrition; it means increase of the metabolism of the cells due to the non-elimination of carbonic acid gas and the arrest of nutrition to that extent. In fevers we have secondary digestion more manifested than anything else, because the speed of the material of metamorphosis and the consumption of fuel being greater than the normal, and the degree increased beyond the normal and the burning is shown by the tissue sustaining itself in secondary digestion to the emaciation of the patient, continuing the emaciating process. The cure of the fever is the return of the normal balance of tissue metamorphosis.

Or, again, as starch and sugar with the crystalloid make up the body, and as the non-splitting up of starch by its normal nitrogenized ferment is the cause of albuminuria, is it not reasonable to expect a cure by furnishing the elements necessary to re-establish the ferment, and then reinstate the epithelium of the uriniferous tubules by the use of the same means nature used in their formation, viz.: the proximate forces carried in in the form of chemical pabulum? The crowding out of the amorphus mineral matter and the substitution of crystalline matter as in penumonia (caused by abnormal chemical differentiation of the proximate principles of nutrition) is the cause of increase of consistency of organs or parts, such as tumors, indurations, tumefactions, and should be easily remedied by re-establishing the normal consistency by the use of those elements required in normal functionality. Pus, mucous, albumin and sugar are the important animal matters of the body.

Every chemical body contributing to the ultimate formation of protoplasm maintains its own peculiar characteristics, that is, it preserves its physical identity up to the time of delivering up its energy for the association of life, a chemical change taking place in such bodies in continuing the organizing process, at which time their physical identity is lost in the process of chemical transformation. The transforming process for continuity is the function of incessant change, in the absence of which the organic process does not go on. An inorganic compound in the absence of vitality will yield the proximate principles of the body's composition, each one of which will be found capable of preserving its identity for a limited time, after which decomposition takes place and continues till the units are again returned to whence they came, which is to the source of organic, which is the inorganic.

There is only one kind of matter in the universe which is modified by external agencies acting upon and causing its differentiation into every element and compound found in the universe. These agencies are the physical agencies of nature which are distinct from the matter, and possess the power of modification. Protoplasm is called the organic basis of life without which life never can appear. It is essentially a colloid body as distinct from the crystalloid.

In order to produce the protoplasm of organized bodies mineral matter is differentiated by the physical agencies of nature till it arrives at that degree of complexity necessary to the formation of protoplasm. This condition of preparation is arrived at without a living agency, and when fully elaborated is ready for the inception of life which is a distinct entity, not entering into the method of preparation, but only associating itself with matter after the condition for association is perfected.

When we are abstracting for chemical and physical examination the different colloids that together combined form the highest complexity known to the body in substances of protoplasm, we are merely taking them apart or disassociating them from one another.

The synthetical stages for the ultimate formation of the substance of the body are manifested in the process of elaboration, which elaboration constitutes the physiological functionality for the production of chemism which means that the normal proportion of all those elements of organic and inorganic chemistry entering into the normal composition of the body must be present. (A reduction of the normal proportion of any one of these elements forming the complex compounds which ultimately produce protoplasm is the cause of disease.) Those colloids in the form of proteids that enter into and are indispensable to the formation of protoplasm must respond to chemism before health and vigor can appear or continue. The association of life with the body takes place when protoplasm is perfectly elaborated by the physical agencies of nature. If there be anything to interrupt from whatever cause that synthetical and analytical process for the elaboration of all those proteids and whatever else required in the ultimate formation of protoplasm, we have disease.

The first degree of departure beyond the physiological limitation of functionality is where the normal barrier breaks down and gives rise to a disorganizing process. The first degree of departure from the normal standard of integrity should be estimated, till we gradually reach the extreme degree of departure. From the first to the last degree of departure from the extreme limitation of physiological functionality, constitutes the whole field of pathology, so that we can divide disease and health into two fields of investigation.

The first field is the developing individual, which is during gestation from embryo and fœtus in utero till birth, and from thence, growth to maturity and from maturity to decrepitude and death. The physiological limitation of functionality is concerned in this field, and when in health is a purely physiological process. The second field is where the barrier of the physiological limitation of functionality has been reached, and where disease commences, there being no disease but functional disorder before this stage has been reached. After this all the degenerative and progressive stages begin and go on, the self-limiting indicating recovery and the continuous other consequences.

Excess and deficiency of nutrition and the abnormal modification and quality of nutrition are the factors producing changes in tissue formation. This constitutes synthetic pathology in the protoplasmic elements; and compounds themselves constitute analytical pathology.

Assimilation and dis-assimilation are the distinguishing phases of metabolism, the one appropriating and constructing, the other decomposing and excreting. These processes are complex and closely interwoven and there are many theories regarding them. Food material and oxygen is efficient in this direction. So also are light and heat in the form of hydrogen and oxygen, both in cell life and that of the human—both start the ferments and their enzyme products. Assimilation is depressed from the want of this, its natural pabulum.

The cell is the seat of the so-called vital process. The nucleus of the cell has been called the bearer of hereditary substance; it has been considered the seat of the power independent of its protoplasm; and at one time it was considered the seat of the vital phenomenon. There have been many theories regarding its use and function, but it is generally acknowledged that both the nucleus

and the protoplasm of the cell are concerned equally in the phenomena of its action. The phenomenon of nuclear division is seen when the nucleus divides into two, forming each their cellulose membrane and so constituting themselves true daughter cells, thus showing that a mutual change of substance takes place between the nucleus and protoplasm of the cell and so showing their indispensable reciprocity. Water, being a very necessary adjunct to the cell life, passes by osmosis through the protoplasm to the nucleus; hence the importance of natural water in preference to distilled water, a fad of the present day. Distilled water should never be used, as we cannot get perfect chemical transformation for synthetical building in cell mechanics when using water deprived of its mineral constituents. The substances held in normal water are essential for perfect metabolism.

The explanation of cell selection, the power to select and appropriate its source of supply, has never been satisfactorily explained on a vital basis—nor can it be except by affinity. When affinities unite, energy is liberated; when affinities separate, energy is absorbed. The various cells of the human body have different materials of sustenance and formation; these they choose from the blood plasma, which is the common nutrine material for tissue cells, each kind selecting the substance necessary to its life, and rejecting that which is not needed. It possesses its own specific make-up and its own characteristic action. It is carried on wholly on a chemical basis and in purely a mechanical manner, the same as is seen in inorganic nature, for it is matter and must obey the law of matter—hence normal chemism—an important fact when formulation is considered.

The cell represents the sum total of energy exhausted by the physical power exerted in its production. The gradational transformation of the cell into the plant during its generative process requires heat, light, electricity and magnetism in their required proportion which is furnished by the seed's environment when in the earth.

Food continues the association of life with the body, and to minister to the continual changes taking place. Without food the organizing process essential to life comes to an end, so food must contain those complex compounds upon which vitality depends for its temporal presence in the body. By food analysis we are able to gain a knowledge of the natural forces and elements of the body that enable it to be sustained in its normal chemical integrity: in other words, a state of health. These when absent in part permit changes, resulting in disease. Food contains the chemically proper elements required in nutrition. The cell will never fail in its work of selection when furnished the elements found in the healthy body.

Disease starts in the cell, and when its organic substances and formations are thoroughly understood we will be able by chemical formulation to introduce those elements and compounds, the loss of which permits alteration of the cell's contents. This would be scientific medicine, with every formula a specific, and all disease could be cured.

Our present knowledge of the cell is sufficient to prove to us that no drugs are present in its composition; therefore chemicals only are required to restore its chemism. A drug is an incompatible which is never found normally in the body. A chemical is an element of the body's composition which is always present: its normal proportion being the only thing necessary.

By the aid of the potentialities the body liberates energy from matter and appropriates it; but when of unlike nature it may be tolerated, but it is never appropriated for repair. Normal transformation is physiological integrity. To aid nature is to furnish that which she requires. Her laws should be understood and her methods followed.

The physiological chemistry of assimilation is the most important process of the chemical changes going on in the body. It should receive more attention than has heretofore been given to it.

The elevation of the dead matter of the surrounding world culminates with the formation of the highest complex compounds that never live, neither do they require to live in order to minister to vitality. They possess the highest principle for the association of life with the body, which is all that is required of them. None of these compounds appear any where in nature, but only where life has at some time manifested itself through them as a material nucleus to connect life with the world, being the same in the absence of life as when in association with life. The only difference is a cessation of that peculiar action necessary to their reproduction. They cease to reproduce themselves in the absence of vitality, but their chemical composition is the same as when thus associated; no generation, no organization going on in them in the absence of life. They are as the seed and if they could be preserved without decomposition arising in them, they would remain as the seed till they entered again into another organizing process of whatever kind eligible to them. The dead body remains as the so-called dead body till decomposition separates its components and returns them again to the realms of the purely inorganic.

The physiological problem of life mechanism as understood to-day is that the life process consists in the metabolism of proteids. I do not agree with this conclusion, for the "life process" includes the entire metabolic process, and not merely the metabolism of proteids. Cell metabolism is due to chemical and physical principles, and can be explained only on a mechanical basis. Chemical affinity for foodstuffs exists in all cells by virtue of the potentialities pent up in the cell which liberates the energy required for the chemism of the cell. Right here will be seen the necessity of supplying in the form of pabulum those forces required to develop the energy necessary for chemical interchange as required for normal cell metabolism; the want of which permits the beginning of cell decrepitude. Everything given in the form of medicine should promote organization. The selective office of the cell will never be at fault in the process of nutrition if it has the proper matter of supply for chemical appropriation. To abnormal fermentation is due some two-thirds of the diseases of humanity. So long as normal fermentation responds to chemism none of these diseases can arise. A specific change caused by some impetus may so act on the nucleus and protoplasm of a cell as to affect its structure; thereby causing a change of the relative position of its units, and so affect its reproducing power. Or the retention in the cell of an enzyme which should be excreted after oxidizing the phosphorous into its acid waste, may give rise to fermentation or malignant degeneration by mal-appropriation. If this be so, and it seems reasonable, we have but to furnish to the cell those elements which sustain combustion and normal fermentation, such as carbon, hydrogen and oxygen, thus abstracting the enzyme, and so removing the impetus that institutes differentiation of tissue unto malignancy and death.

It is hoped that investigators will give thought to this idea. It is more reasonable to believe that malignancy is due to some cause originating in the cell which has departed from integrity than it is to believe that a germ is

the cause. Protoplasmic function is wholly mechanical; in its normal function a germ has no place. Heat, light, electricity and magnetism are the forces which generate chemical energy. The introduction of heat and light in the form of Carbon, Hydrogen and Oxygen compatibly arranged should render available the chemical energy necessary for repair. The Finsen rays and the X-ray work by this principle, but they are not wholly compatible.

NEURASTHENIA CORDIS,—WEAK HEART,—IRRITABLE HEART.

BY EGBERT GUERNSEY RANKIN, A.M., M.D., NEW YORK.

THERE are a number of affections of the heart which are difficult to define and which, while apparently functional and independent of organic changes, are not always clearly saparable from them. They have been described as weak heart, cardiac neurasthenia, cardiac asthenia, irritable heart and "soldier's heart." These conditions are intimately related, all being the results of defective innervation, their differences for the most part being those of type and degree. They have for this reason been grouped by some writers under the general head of neurasthenia cordis, but inasmuch as they present certain individual characteristics their separate consideration would seem admissible. From their nomenclature the absence of any organic change in the structure of the organ is implied. This, however, is not literally true, since modern pathology has demonstrated that in functional disturbances the nerve cells undergo a certain amount of granulation, contraction of the protoplasm and vacuolation of the nuclei. These effects have been observed after nervous irritation and fatigue. They are characterized by their transitory nature.

NEURASTHENIA CORDIS.

This is a state of general debility of the heart muscle arising from defective innervation of the organ and associated with a similar general defective innervation of the nervous system.

Its origin may be traced to many causes including reflex irritation, physical exhaustion from strain, fatigue and exercise, onanism, continence, coitus reservatus, psychical influences such as shock, failure in business, or in some undertaking, chagrin, love disappointment, general neurasthenia, the effect of long fever, especially typhoid, uric acid, gout and suppressed gout. The abuse of coffee, tobacco and alcohol are frequently important contributing causes. The patients are usually young and of nervous temperament but generally of good constitution and belong, as a rule, to the upper walks of life.

The symptoms of cardiac neurasthenia vary according to the stage of the affection. The early period is characterized by excitement and irritation. This is followed by a more or less gradual change to an atonic condition.

The onset of the stage of excitation may be gradual or sudden, usually it is the former. There is great increase in the rate of the pulse which may mount as high as 200 per minute, being in fact, a true tachycardia. In rare instances there is bradycardia. Palpitation is not usual, the patient may rather complain that the heart is acting feebly. There may be intermittence and irregularity of the pulse. There is sensitiveness in the præcordial region and intercostal spaces or there may be præcordial distress, anomalous sensations, anxiety, labored respirations and sometimes severe pains simulating angina. The countenance is pale or flushed, changing from one condition to the other. It may be red in spots or lines. There is numbness of different parts of the body, especially of the fingers and toes. The extremities may be alternately cold or hot. The arteries near the surface are distended and tortuous. Nervous symptoms are pronounced, sleep is disturbed, and the patient wakens with great anxiety. There is excessive sensitiveness to any noise or sudden surprise or movement. Change of position or even disturbing thoughts will greatly excite the pulse. The heart shows a strong and rapid action but no indications of organic change.

Sooner or later the symptoms become less active and the period of decline to the atonic condition follows. The patient is now more irritable or is very apathetic or indifferent. The pulse becomes dicrotic showing lowering of tension of the arterial system. The heart action is further characterized by increased weakness and irritability. In a certain proportion of cases with a varying degree of prominence, symptoms of general neurasthenia will be present, viz., indifference to surroundings, lack of interest in events of life, disinclination to effort, agoraphobia, nosophobia, monophobia, constant introspection, intense irritability, suppressed excitement, neurasthenic pains, etc.

The neurasthenic heart may simulate weakness from organic disease, but the absence of the physical signs of organic changes together with the presence of symptoms above mentioned will usually remove all source of error. Organic heart disease, however, may cöexist with neurasthenia.

The prognosis is generally favorable. The condition is, however, often prolonged and obstinate, but in time the heart and general health regain their lost tone, and the patient is entirely restored. In some cases, on the other hand, especially those in which the course of the affection has been very protracted, the outlook is not by any means so hopeful as far as complete recovery is concerned.

The management of cases of cordis neurasthenia is on the same lines as that of general neurasthenia, and is, therefore, mostly hygienic and dietetic. Change of scene and climate and diversion or a sea voyage will suit some cases. For others the rest cure and isolation is better.

The diet should be highly nutritive and easily digested. The appetite should be stimulated by tonics, such as arsenic, cinchona, and nux vomica. When there is an excess of uric acid, alkalies or some suitable mineral water, especially that of Lincoln Spring, Saratoga, will be of advantage.

For insomnia, a warm bath followed by a glass of hot milk at bedtime should be tried in preference to the use of hypnotics, which if possible, should be avoided. Among the useful remedies are the hypophosphite of lime and soda, the glycerophosphate of lime, kali phosphate in trituration, arsenicum album, ignatia, phosphoric acid, strychnia subcutaneously beginning with small doses and increasing, hydrotherapy with friction and massage, the Nauheim bath and graduated exercises by Schott.

WEAK HEART.

This term has come into general use and is employed in two senses, viz., a relaxed, constantly failing organ and a transitory weakness. The first originates from a variety of causes including congenital weakness, inadequacy, influences which when more active and severe result in degeneration and atrophy, pyrexia, abuse of

alcoholic stimulants, excessive fatigue and any condition which may lead to defective nutrition. Postmortem examination of the heart in this form of cardiac weakness in some instances discloses a condition of simple relaxation of the myocardial muscular tissues, which are soft and friable. The microscope fails to reveal any change. In others there are changes in the form of atrophy of the fibrillæ and augmentation of the longitudinal striæ, with separation of the muscular fibres. Sometimes there are degenerative and atrophic changes. Granular atrophy is also present with decrease of striation and without diminution of the muscular substance. Pigmentary atrophy of a brownish color is also observed with pigmentary deposit around the nucleus of the muscle cell. It should be remembered, however, that a certain amount of pigment is present in every heart after death. These deposits are observed in that part of the organ which is subjected to the most strain.

The symptoms are shortness of breath, palpitation with some faintness and vertigo. The pulse is small and empty, sometimes very slow and sometimes very rapid, the rhythm is likewise fluctuating, being at times regular at others irregular. The impulse and heart sounds are weak and almost if not entirely imperceptible. The first sound appears to undergo the greatest amount of diminution in force and in some instances it may not be possible to distinguish it. A soft, blowing murmur may be audible in the mitral and tricuspid regions. In severe cases there is subcutaneous œdema and symptoms of venous stasis.

This group of symptoms may be more or less, but not entirely obscured by those of the morbid condition which give rise to it.

Another type of this condition arises from nervous strain from worry or overwork. It may appear in either sex at any time of life. The patient appears entirely prostrated, lies in bed and falls back in a fainting condition at every attempt to sit or stand up. There is more or less insomnia but physical symptoms are absent. The heart action is feeble and the pulse is small and increased in frequency with disturbance of the rhythm. Cases of this nature are slow in recovery.

The future of this form of heart weakness is generally variable and treatment should be on the general principles of removal of the cause and of increase of nutrition.

The second variety of heart weakness, that which has been defined as transitory, is generally observed in neurotic persons, especially females. The patient complains of a sensation which is described as a "stopping of the heart." For a moment he feels as if the organ had ceased to beat. The countenance becomes pallid and the hands are usually pressed against the præcordial region to relieve the throbbing, not the pain. There is marked nervousness and apprehension. The pulse is somewhat weak and ranges from 100 to 110. There is no danger in the condition. Stimulants will usually relieve it but alcoholics should be avoided if possible for fear of forming the habit as the attacks are recurrent. Treatment should include massage, electricity, salt water baths, strychnia and general tonics.

IRRITABLE HEART.

This condition is observed in both the young and in those of advanced years, but is more frequent in the former. It was first described by Da Costa, being distinguished by him from cardiac weakness, asthenia, weakness of organic disease, and that of lithæmia, gout, and tobacco poisoning. It arises from the effects of strain, both physical and psychical.

The symptoms are described as a sensation of throbbing and palpitation. It is said the organ appears suddenly to jump. The sensation comes on with or without apparent exciting causes and is annoying even during sleep. Although regarded as a separate entity it really appears as a form of palpitation of neurotic origin. There is usually the history of excess in exercise or some nervous disease. The pulse may be dicrotic and arteries lax in contrast to the exalted action of the heart. Examination discloses some resemblance to hypertrophy. The first sound is indistinct, the second at the apex somewhat exaggerated. The rhythm may be uneven.

British writers describe a form of cardiac neurosis which they designate "soldier's heart." This condition occurs in new recruits, especially those whose previous lives have been sedentary, and is a form of muscular strain. Allbutt described the symptoms as follows: The patients state that while remaining free from any physical exertion they experience no discomfort and feel quite well, but immediately on commencing to march they suffer with throbbing of the heart and shortness of breath sometimes accompanied by vertigo and faintness. There may also be pain, nervousness or insomnia. Pulse may be either regular or irregular, ranging in frequency from 100 to 120 with low arterial pressure. These symptoms disappear on resting but reappear on resuming the march.

Physical examination fails to disclose the presence of organic lesion, although, according to Allbutt, there is sometimes increase in the area of dullness with diffusion of the impulse. In his cases it is stated that there was reduplication of the second sound at the base, in five the pulmonic sound was accentuated, and in six the first sound was short in duration.

The causes of this condition are given as excessive labor and short rations with excesses in alcohol and tobacco. The prognosis is said to be unfavorable and the condition is liable to result in permanent dilitation.*

THE FALLING BIRTH-RATE.

BY A. L. BENEDICT, M.D., BUFFALO.

WITHIN the last few years the attention of the medical profession has repeatedly been called to the fact that the birth-rate of the more civilized countries has diminished materially and that this diminution has occurred especially in the so-called upper classes. Nearly every writer has expressed grave concern as to this sociologic fact and has ascribed the change to a dangerous moral state of society. While there is considerable reason for this pessimistic view, a closer analysis of the conditions existing does not justify the wholesale condemnation of modern family life.

At the outset, we should have a clear idea of what may be taken as the normal maximum birth-rate. In 1890, there were in the United States, in every average thousand of the population 153 women of marriageable and reproductive age, that is between 19 and 40. The report of the latest census is not available, but it is not likely that any material change has occurred. Probably the most enthusiastic adherent of the "propagate and multiply" commandment would scarcely demand that women should breed before reaching full maturity nor expect that any considerable number would be fitted to bear children after the age of 40. If every woman married and bore a child each year, the birth-rate would be exactly 153 per 1,000. This supposition makes no allow-

* System of Medicine, Vol. vi., Thos. C. Allbutt.

ance for defectives, for failure to marry, etc., and the mere fact that families of twenty children are rare under the most favorable circumstances for prolificity shows that a birth-rate of 153:1,000 is considerably in excess of theoretic possibility, and, of course, many times as great as could be attained by any people, however well disposed. J. Holt Schooling, in a popular article, has assembled statistics that show that, for the nineteenth century, the world's population has increased at the rate of about 1 per cent. annually, that is to say, that the birth-rate has been about 35 per thousand. At this rate of increase—and we must remember that sanitary and social conditions are steadily tending toward a diminished death-rate—he estimates that the world will be absolutely full in 2250 A. D., with a population of 1,001 to the square mile, and that by 2100, the world will have an average population of 225 to the square mile, which is about that of the European countries of to-day, which are considered by most persons as uncomfortably overcrowded. In such a calculation there are two fallacies to consider; first, that circumstances would allow a regular increase by "compound interest," second, that the matter would be any less horrible on this account. In times past, plague or other infectious diseases—occurring sometimes as a vast epidemic of one kind, sometimes as a gradual increase of various bacterial diseases—and war, have put a check on too rapid increase of population. In the future, increasing poverty, lessened opportunity to find rest in quiet spots remote from large collections of humanity, in short, all the evils of excessive population will continue to act, as they have already begun to act, to produce diseases of degeneration, to lessen fecundity and practically to compel a subsidence of the birth-rate. Thus, to use a mathematic metaphor, the absolute fullness of the world is an asympote which the curve of increasing population will never reach, but to which it has already closely approached. Whatever may be the sociologic evil of restricted birth-rate, it cannot compare with the horrible struggle for existence which would ensue if densely populated countries continued to increase at a rate possible and desirable only in the pioneer state when every human being is welcomed as a needed toiler in developing new lands and new industries.

But this question depends on moral as well as sociologic elements and too great foresight is not demanded of this generation for, as long as vast, unoccupied tracts of arable land exist, there are no superfluous men and women save the defective, nor is it even necessary that the population should be equally distributed though it certainly is true that we are now suffering from a congestion of life in large cities and from lack of manual labor in the country.

A marked diminution of birth-rate may depend on any of three general factors: first, relative sterility, male or female; secondly, relative sexual continence, either celibate or in the married state; thirdly, measures to prevent or abort pregnancy. The explicit or implicit claim has been made that the third general factor is the most important and it is a disbelief of this charge against modern society that has prompted this article. One writer, whose article has not yet been challenged, has gone so far as to incriminate surgeons and to charge that an appreciable impression has been made on the birth-rate by oophorectomies on healthy women. To be sure, he is explicit only as regards France and it is difficult for a medical practitioner to refute any such charge with positive evidence, but the present writer feels that every medical man is insulted by such a claim, whatever his line of practice or nationality and that it should be dismissed till accompanied by proof. It seems more probable that for every woman needlessly unsexed, even without improper motives on the part of the operator, ten are subjected to further suffering and second operations, through the conscientious objection of coeliotomists to remove both ovaries. That abortion and the prevention of conception, especially the latter, are factors of considerable weight, is evident to every physician. Indeed, it seems to the writer that a very plausible argument could be presented showing the relation of preventive measures to the development of the rubber industry. But, to give the Devil his due, it should be granted that the vogue of the syringe and the condom or occlusive pessary have, at least, reduced the number of abortions and the frequency of onanistic methods.

Important as this factor is, relative sterility and continence are operative in a greater number of instances than some writers admit. Marriage is no longer so much a matter of breeding as of life companionship, and, both in the unmarried and the married, a non-sexual life is more prevalent than formerly. The postponement of marriage or the absolute failure to marry is, sociologically, regrettable if we think of the matter in the light of the commandment to propagate and multiply though otherwise it is difficult to see why voluntary celibacy should be considered in so unfavorable a light. But, when a theory meets a condition, it is a foregone conclusion which will stand aside. Young men and women ought to marry and bear children without regard to the future. In a pioneer state of life, with simple needs and more land and raw material than could be made available, early marriage and large families of children were the rule. In these days, woman are financially more independent, the standard of civilized life is higher and it is increasingly more difficult to meet this standard. We may call it mercenary spirit, selfishness, disobedience to the law of God or anything else we please, but we have to deal with an *argumentum ad hominem* and, in the vast majority of cases, neither the prospective bridegroom, bride, nor their families and friends will decide in favor of a marriage which means the abnegation of proper ambition and the courting of squalor. The result is inevitable; the age of matrimony has advanced at least eight years in the last century; in this eight year period many potential fathers and mothers die, many are widowed without ever having been married—and who can censure their faithfulness to their early love?—many outgrow their early ideals and their youthful passion and fail to find in later life a mate whom they can conscientiously wed. Those who do marry, are by no means justly liable to the inuendos of the statiscian because they do not produce as many children as did their grandparents. An immature female is notoriously prolific, though the offspring is not particularly resistant, and the cutting short of the term of married life by eight years of the most passionate period necessarily implies a reduction of the birth-rate of nearly fifty per cent.

A little study of genealogy will convince the most pessimistic that this enormous reduction of birth-rate is by no means so serious as it might seem. A high birth-rate means a high death-rate, partly because the immature mother, rushed from one pregnancy to another, cannot produce vigorous offspring, partly because lactation is prematurely interrupted, partly because of the absolute inability in the average family of providing the care which young children need. Even in the most salubrious surroundings, the death-rate of infants from unspecified causes, from accidental smothering, from the various forms of "taking cold" and the succumbing

of young adults or adolescents to various diseases, among our large American families was something appalling. So long as these families had unlimited breathing space in the country, they increased rapidly almost by ten in geometric progression, from one generation to the next, in spite of a mortality of nearly fifty per cent. before the age of thirty. All American genealogies tell the same story; often they do not tell it adequately because of the omission from the published records, almost from the memory of the parents, of children dead in early infancy. As soon as village or city life began, marked prolificity proved almost destructive to the family simply because the care and vitality which ought to have been shared by four or five children was divided among ten or fifteen. Let me cite two examples: two members of prolific families married and had four boys and six girls. Two boys died in adolescence, one died of consumption soon after marriage and without offspring, one remained single because he had to support the family. Of the girls, one died in adolescence, one remained single and was an invalid till comparatively late in life, one married and died soon after marriage, her infant child dying soon after, from lack of a mother's care, one bore several children but only one lived till maturity and then died of consumption, one remained single, laboring to help support her numerous younger brothers and sisters, one bore a single child who survived—net result, one grandchild of mature age, bearing another surname, from this union of untainted and prolific stocks. This is, undoubtedly, a marked case, yet it is by no means unparalleled. The dying out of many prominent colonial families, especially of those who achieved especial distinction, is undoubtedly due to similar causes. Even without the element of poverty, excessive prolificity has a destructive tendency. For instance, a man and woman still living may be cited. Married about twenty years ago, with an abundance of worldly goods, with every means of caring for their offspring, including hygienic city life in the winter and an ideal country residence for the summer, the wife has scarcely been in the non-pregnant state for more than two or three months at a time. Net result, several miscarriages, due to no crime or negligence, a row of small graves, three healthy children from five to seventeen years of age, one infant of uncertain health and one child in the most precarious state of health. That marked prolificity is not a natural condition, is established by observations of savage tribes. Here we find that the population remains practically stationary or is rapidly depleted by famine or war if an unusual increase occurs. Few women bear more than five or six children and infant mortality from exposure, lack of care, insufficient and improper food, etc., is so high that each average couple does barely more than replace itself. When a people with civilized intelligence and carrying with them many civilized comforts, emigrates into a country of savage abundance, conditions favor a rapid increase of population. For example, all of the writer's name in North America, barring a few who have been adopted, who have appropriated the name or who have come directly from France or Germany—in the latter case a change of spelling is involved—are descended from one couple within an average of eight or nine generations. Probably there are no survivors of the fifth and very few children of the eleventh generation; the total of two or three thousand representing the eighth, ninth and tenth generations, with a few of the seventh. The same is true of most American families. Even those few that have become extinct by name—for instance the Lindalls—are represented by descendants of other surnames. The enormous increase of the colonial Americans is rivaled or exceeded by that of more recent immigrants, under the stimulus of better food and conditions of life. In either case, we must remember that female activity is free from nearly every drain save those of simple domestic life and child-bearing. When the conditions change so that many other anxieties are added to life and vitality is correspondingly sapped, it is unjust to argue that the natural diminution of fecundity indicates criminal practices or a cold-blooded refusal to rear offspring. It may even be that, in a relative sense, there is such a thing as inherited sterility and that the almost inevitable sequence of small families upon large ones, is due to physiologic exhaustion of nervous energy required for conception and maturation and is not solely dependent upon sociologic factors.

Much concern has been expressed by some writers that the falling off of birth-rate occurs especially among the so-called leisure class. That the wealthy class does reproduce very scantily is beyond question. Sociologically, this fact should be regarded as conservative as it tends to liberate wealth and the opportunity to obtain wealth, for the benefit of the community as a whole. By this process of dying at the top, the tree of human life is enabled to grow upward from the bottom. The rarity with which ruling or prominently wealthy families remain in power and the extinction of most of the families which were prominent in history, say, five hundred years previously, illustrate this conservative tendency in the interests of human equality while the development of master minds whenever occasion demands them, shows how futile is the fear, sometimes expressed, that the world's population will deteriorate in quality through the dying out of the so-called better classes.

Nor, in the writer's opinion, is it even necessary to comfort ourselves with the thought that the wickedness of this quasi better class in refusing to multiply, is offset by a sociologic compensation. Up to a very few years ago—too short a time to have accomplished a change in fertility—our wealthy class of women was unfitted for reproducing healthy offspring partly by heredity, largely by their habits and social customs which dwarfed physical strength and exhausted nervous vitality. It is a specious argument to claim that because a society belle's grandmother did large washings, helped her husband mow away hay, milked cows and reared a family of ten or twelve children, it is all the fault of the rubber industry that her granddaughter, with nothing else to do, is almost or quite sterile. Perhaps, if the grandmother had not persistently overtaxed her muscles and reproductive organs, the granddaughter would have a greater stock of sexual vitality and it is altogether probable that her husband's business life renders him less virile than her grandfather. The writer does not claim that human society of the present is perfect or that it is free from a desire to limit its reproductiveness, but he believes that the evil has been grossly exaggerated and that before accepting the pessimistic view, an opportunity should be given the family physician to state what proportion of his patients are wilfully neglecting duties of maternity and how many of his surgical colleagues are criminally unsexing women.

—Despierris (*Jour. Des Praticiens,* April 20, 1901) states that while it is known that aqueous solutions of from 1 to 4,000 to 1 to 10,000 of corrosive sublimate are very painful when applied to the nasal mucous membrane, when these solutions are combined in a proportion of about 2 drams to 1,000 parts of sodium chloride they do not cause the slightest pain when applied to mucous membranes.

URETHRAL TUMORS.

BY A. C. GRIGGS, M.D., PHILADELPHIA, PA.

I believe with the improvement of instruments for urethral examination, and the consequent greater attention devoted to this surgical specialty, many varying conditions will be brought to light which are now known as stricture, gleet, irritable urethra, etc. The study of laryngoscopy has grown since the introduction of throat mirror and its accessories. Prior to the middle half of this century the recorded cases of laryngeal tumors could readily be counted, while at the present day laryngologists are reporting their tumor cases in long papers.

Growths in the male urethra were recognized even as far back as 1718, when Pascal described two in his Treatise on Gonorrhoea, which occured in soldiers. In 1763, Arnaud reports a case where there existed a polypoid excrescence an inch long, of red color, and projecting from the urethra. Velpau makes mention of a small growth occuring in the fossa navicularis which was mistaken for a small pea-shaped cancer, which the latter had excised and cauterized.. Hunter's specimen is now in the museum of the Royal College of Surgeons. While Dessault never met with any in his whole experience, Erichsen found a growth in the urethral orifice, nodulated, raspberry-like in appearance, and the size of a cherry stone. Sir Henry Thompson mentions a similar case occurring in his practice.

Holmes reports a somewhat similar case occurring in a man aged fifty-four. He considered these growths intra-urethral warts, vascular and very ready to bleed. Gross, in a similar case, exposed a growth by cutting open the dorsum of the penis as far back as the glans, exposing a small nodular tumor, on the floor of the fossa navicularis. Urethral growths in the female have excited greater interest. The most important of the urethral growths thus far described are the so-called vascular tumors and polypi, varying in size from a millet-seed to a hazelnut, usually in or about the fossa navicularis, although polypi have been noticed along the course of the urethra. In the female they usualy occur near the meatus. Two or more have occasionally been seen in one urethra. Urethral tumors are variously described as being a pale cherry or raspberry hue, and again as having a deep congested color, being raised above the surrounding mucous membrane, their shape conical or ovoidal, with broad base, or pedunculated, exquisitely sensitive, bleeding upon the slightest irritation.

It is known definitely that their growth is usually slow, once they have attained a certain volume. Their origin is commonly insidious, and hence a considerable time often elapses before the patient knows of their presence. Gonorrhea is given by many authorities as a common cause of these tumors, this disease being more frequent in the male, and we naturally expect to find these growths predominate in the male urethra. Yet the female urethra, seldom the seat of a specific inflammation, is frequently invaded by vascular tumors.

The classification of these growths is not clear. Undoubtedly two varieties of tumors are found in the male urethra or prostate, are a pink or pearly color, springurethra, the "fibrous polypi" and the "papillomata." The fibroid polypi found in the old, usually far back in the urethra or prostrate, are a pink or pearly color, springing form the submucous tissue, with well-marked pedicles, usually occurring singly, not sensitive, and with little tendency to bleed.

The papilloma, the most common variety, are found in all parts of the urethra, but preferably about the fossa navicularis, varying in size, character, and appearance. Their color varies from a light pink to a deep raspberry hue. They may asume the shape of a polypus with a narrow pedicle, or a hard nodular growth, slightly raised above the surrounding mucous membrane; or again, be soft, flaccid, and present the appearance of an erectile growth. As a rule, they are extremely sensitive and painful. Paget believes the polypi to be composed of delicate fibro-cellular tissue, with fine undulating and interlacing bundles of fibro-cellular Tissue. Small cysts of synovia-like fluid sometimes exist with them. Paget observes that papillomata may be occasioned by an hypertrophy of the normal papilla, or may be a new formation in the part. They have many points of resemblance to the papillæ which in various localities constitute natural projections from free surfaces. Their basis-substance is formed of connective tissue, which is continuous with that which normally exists in the part; while the free surface is covered by epithelium which may vary in thickness and in the number of its layers.

Blood vessels and nerves enter into the centre of the papillæ. When a number of growths became aggregated they form a tumor of some size. It sometimes happens that the vascular tissue is considerable, that it extends throughout, even to the free surface, and the whole outgrowth seems like a vascular plexus. If a single loop be examined it will appear as if the epithelium were in contract with the capillary wall.

The suffering which these tumors cause at times is so great that it renders the patient utterly miserable and unfit for the ordinary duties of life. This pain is increased by walking, horseback exercise, micturition, and sexual intercourse. These growths have been mistaken for stricture, or the little irregularities following gonorrhœa. It sometimes happens in using the catheter that a small polypoid growth finds its way into the fenestra and is thus torn away from its attachment. Its position may be located by means of the olive-pointed bougie, aided often by the patient, who may complain of one particularly sensitive point. When the growth is in or near the fossa navicularis the mucous surfaces may be brought into view by means of a small urethral or an ear speculum, or an extemporized one made of two hairpins forced into a small cork at right angles to each other, and the canal illuminated by means of a mirror. When the seat of the tumor is located deep in the urethra, the urethral endoscope, if skillfully used, may be of great service in making or verifying a diagnosis.

To theat these cases with astringents, iodine, and caustics is wrong. Complete enucleation either with knife, scissors, Paquelin cautery, or wire loop is required; the removal by means of a ligature is awkward and painful, and seldom effectual. Growths situated near the meatus may be snipped off by scissors, or, if of a polypoid character, removed by means of a wire loop.

These cases of papilloma are worthy of note, being reported to illustrate the previous text.

R. B., aged thirty-five, exhibited a tender and sensitive spot near the urethral orifice. This is especially annoying when he urinated, the calibre of the stream being reduced. He had been operated on for stricture and immediately after the operation (internal urethrotomy) he began to bleed freely from the urethra. He presented a blanched and anæmic countenance, with all the symptoms of a person who had been subject to exhausting hemorrhage. A No. 12 English catherer was retained in the urethra by strips of adhesive plaster, making pressure on the greater portion of the penis behind the glans.

The patient protested against having the plaster removed, saying that as soon as it was loosened the bleeding would recur. Thinking he was unnecessarily nervous, the operator removed both catheter and straps. This was followed by a bright stream of arterial blood. A large metallic catheter was introduced, the patient complaining of great pain a short distance from the orifice of the urethra. Pressure was applied as advised in urethral hemorrhage, but failed utterly to control the bleeding except when sufficient to interfere with the circulation of the entire organ. A tourniquet was placed on the penis. The patient was etherized, and the urethra more carefully explored by means of an olive-pointed bougie, which revealed a marked constriction about an inch from its orfice. In order to expose it, the urethra was laid open on a grooved director, as far back as the corona, which disclosed a dark cherry-red nodular growth, about the size of a split pea, and very sensitive.

The patient flinched when touching this point after other reflexes were abolished. On loosening the tourniquet the blood spouted from a fair-sized vessel in the centre of the growth. Any attempt to ligitate the bleeding point was fruitless, owing to its density. Astringents were also useless. The actual cautery was then resorted to, and vigorously applied until the entire growth was destroyed. The hemorrhage was completely controlled. The wound was brought into apposition and closed with two hair-lip pins. A soft, flexible catheter was introduced into the bladder and allowed to remain in situ forty-eight hours. The wound united by primary union, and the third day the pins were removed. A liberal diet and full doses of iron and quinine soon brought color to the blanched lips, and on the eleventh day the patient desired to return home, saying that he felt perfectly well, free from pain, and experienceded no difficulty whatever in urinating.

The other case is as follows:

J. McC. had noticed a sensitive point within his urethra, which was increased upon urination, at the same time the calibre of the stream was becoming much reduced. He had consulted a physician, who, after an examination, informed him that he was suffering from a stricture of the urethra. He had ordered him a short, straight metallic bougie, with directions how to use it. Every attempt to introduce it produced so much pain that he was forced to abandon its use, and determined to seek other advice. He was a strong, well developed man, of good color, with penis of normal size, and prepuce well retracted. A sensitive point was discovered on digital examination, directly under the corona. An exploration with the bougie made apparent an obstruction of some size about the fossa navicularis, so sensitive that it was impossible to satisfactorily explore it. The penis was laid open on the dorsum, sufficiently to expose the floor of the fossa navicularis. A dark cherry-colored growth, about the size of a half pea was exposed, with a smooth mucous covering, situated on the floor of the fossa narvicularis, and raised some distance above the surrounding tissue, with no tendency to bleed, but excessively sensitive. On the slightest irritation he would evince pain after all the other reflexes were abolished. The growth was thoroughly destroyed as in the first case, with the actual cautery, and the wound carefully approximated with two hair-lip pins. These were allowed to remain two days, the wound uniting per primam. The patient expressed himself as greatly relieved, experiencing no pain whatever, nor difficulty in micturition.

According to Harte, who has done much work in this line, when the character of the growth is similar to the two cases cited, which are decidedly the most troublesome and annoying, the only procedure to be employed is to lay the penis open on the dorsum, cutting through the spongy portion from the urethra out. The hemorrhage is controlled by a small rubber cord tied around the base of the penis. This incision should expose the mucous surface as far back as may be deemed necessary; the growth may then be enucleated by any of the abovementioned plans, care being taken to remove sufficient surrounding tissue to guard against recurrence.

The wound on the dorsum of the penis (after washing with a solution of bichloride of mercury, 1 to 2000) may be approximated by means of hair-lip pins, and a soft English catheter placed in the bladder. The parts being very vascular the wound heals quickly. The pins can be removed on the third day, and on the fourth or fifth day the patient will be practically free from all further trouble. In this way a very troublesome condition is permanently removed.

THE PRETUBERCULAR STATE.

BY W. S. PHILIPS, M. D., BELL CENTER, O.

SINCE the savage in his native environment is free from tuberculosis, we must conclude that certain conditions of civilization are responsible for its development. That it is not due to the manner in which our bodies are clad, the comfortable homes in which we live, nor to the progress of intellectual development per se, is too evident to need refutation. However, as a truth of common observation, certain external and systemic conditions favor its development; some of the prominent of which are high relative humidity of the atmosphere, improper relation of the height to the weight of the body, senility, pregnancy, imperfect digestion, and certain diseases, as measles, scarlet fever, smallpox, typhoid fever and nephritis.

That there is an ultimate common state prior to the development of tuberculosis into which all of these external and internal influences converge, is apparent, using analogous operations of nature as to cause and effect, as our basis of judgment—otherwise, the accredited results of observation are without any foundation in fact. Susceptibility is but a circumstance or combination of circumstances of human existence, and in tubercular infection will be found to be as simple as wound infection when properly elucidated.

The first link in the chain of evidence relates to food ingestion. Among the common domestic animals we find the cow readily tuberculosable, while the horse is rarely so. In the performance of their bodily functions three striking distinctions are observed. The former habitually exhales organic matter with the expired air. The horse is an habitual sweater, while the cow is not, and the horse is protected from the results of overfeeding by attacks of acute indigestion and colic, a rare occurrence in the cow. Again the cattle on a thousand hills, whose provender is such as nature furnishes in its original state are relatively free from tuberculosis, while the stall-fed herds of the Queen of England became the wholesale victims of slaughter. Also the cows of the dairyman whose sole income is the product of the dairy are more frequent victims than that of the farmer whose herd is only an incident of his industry. The fact that feed makes milk and milk brings ready cash impresses itself more forcibly on the former than on the latter.

A number of children having spinal tuberculosis with whose home life the writer has been familiar from

their birth furnish similar examples. The products of the confectioner and the pastry cook have been almost constant elements in their dietary, and their life history has been characterized by attacks of acute indigestion, sore throat, decayed teeth, foul breath and feelings of indisposition produced by the indigestion of food beyond the requirements of the system and made with especial reference to gratify the sense of taste rather than contributing to the actual needs of the body. As a rule this is the manner in which people, both young and old, are fed, both in the families of the rich and among the humble tenants of the cottage.

With the savage in his native state, the case is different. His stomach is not made the receptacle of that which is prepared with reference to his gustatory sense except in so far as it may satisfy the natural feelings of hunger, the circulation neither being flooded with a pabulum for which the economy has no use, nor with the products of fermentation and decomposition of the ingested food.

Also it is a matter of observation that a functionless skin is too frequently associated with the development of tuberculosis to be a mere coincidence—a condition referred frequently to an attack of some eruptive disease in childhood, so that conditions impairing the function of elimination favor the production of tuberculosis. A damp, cool atmosphere, permitting the rapid radiation of bodily heat and contracting the cutaneous capillaries, reduces the function of the glands of the skin to a minimum.

The population of our penal institutions inhabiting the damp dungeons of their abode develop a mortality from tuberculosis that is simply frightful, and the history of the average case in the outside world, unless occurring as an immediate sequel to some of the diseases heretofore mentioned, traces its origin to the late winter or early spring when the air is saturated with moisture, and the function of the skin is at a low ebb, as can be demonstrated upon the body of any healthy person. Pregnancy, owing to its derivative effect upon the circulation, depleting the cutaneous vessels, produces the same effect upon the skin, as also do the retained chemical products usually excreted by the kidneys, through their effect upon the nervous system, in inherited or acquired kidney insufficiency. Inflammatory diseases of the skin such as measles and smallpox which are found in the category of remote causes of tuberculosis, evidently injure and destroy the glandular structures of the skin and operate in the same way. Then stating the proposition conversely, it is equally true in pathology as in mathematics, that two quantities equal to each other are equal to the same thing.

In the case before us, whether the natural organic waste of the body is denied an exit or the circulation overloaded with nutrient pabulum or nutriment unprepared for its reception into the circulation, the resulting phenomena observed are identical—the disturbance of digestion being the usual intermediate difficulty commonly noticed. Given the case of a healthy child having unrestrained access upon a single occasion to that which is atractive to the taste; the next morning will reveal upon the most superficial observation a coated tongue and foul breath. The same things are noticeable in all of the circumstances in which the process of oxidation is quickened, as in fever or when the function of the skin is compromised such as in atmospheric conditions, senility, Bright's disease, measles and pregnancy; no taint of fetor being found in the blood of the latter and certainly in none of the others.

Or the case of an individual whose height is out of proportion to his weight. Pound for pound he requires the same amount of nutriment as the individual whose corpulence is up to the standard, while all the glandular structures of his body have length without corresponding circumference, so to speak, with a consequent diminution of vital energy on account of which the food products are thrown into the circulation in an unfit shape for its reception, there to be disposed of in some other than the usual way.

Some recent observations seem to indicate that in pulmonary consumption the interchange of gases is much more active than ordinary, nor is it to be wondered at that the circulation, loaded with organic debris and food products, both imperfectly prepared and in excess of the needs of the body, should manifest an extraordinary hunger for oxygen, increasing the amount of carbon dioxid in proportion.

That the coated tongue and teeth and the offensive breath are but different expressions of the same thing, is evident from the fact of both being produced by an identical chain of circumstances. That the former is a deposit of semi-solid organic matter, escaping from the blood and carried out by the expired air, is certain because of a like behavior of other impure gases and because of its having no other possible origin. That the fetid breath is the result of decomposed organic matter is indicated by the sense of smell and that the place of lodgment and process of decomposition occur somewhere in the respiratory tract and not existing in a state of decay while suspended in the blood.

There is a point in the terminal bronchi beyond which there is no epithelial lining and beyond which nature is almost powerless to remove any foreign material save by absorption, as indicated by the invisible disappearance of the exudate in pneumonia and the tedious process of removing insoluble particles of dust inhaled, lasting for many months in the case of the coal miner. In the peribronchial tissue of the terminal bronchi is usually to be found the first evidences of tubercular invasion.

Thus associating the circumstances in the history of the individual who sooner or later becomes tubercular with the known phenomena of its development, we can only arrive at the conclusion that in the morbid conditions before mentioned the bacillus is furnished a culture-medium not essentially changed from that in which it is propagated outside the body, and the place in the terminal bronchi where it may remain until liquefaction occurs, then by absorption to find entrance into the body, inciting inflammatory reaction either immediately or remotely as the vital processes are able or unable to hedge in the invader by the barrier so produced.

Influence of Diet on the Re-establishment of the Cardiac Functions.—J. L. Prevost and F. Battelli found that when animals were killed by asphyxia from occlusion of the trachea or by means of chloroform, the heart was arrested in diastole. If artificial respiration was produced, and massage applied to the heart, the rhythmical beating of the heart returned, providing the animal had been killed while digesting a mixed meal of meat and bread. In fasting animals, there were produced permanent fibrillary tremors. A diet of albuminoids only produced the tremors in some cases preceded by rhythmic beatings. Fat caused the tremors, hydrocarbons rhythmic contractions which were not constant. It may therefore be asserted that a mixed diet has the most favorable influence on the restoration of the cardiac function after asphyxia.

A STUDY OF THE TREATMENT OF VARIOUS FORMS OF HEART DISEASE.

BY G. R. JOHNSON, M. D., PHILADELPHIA.

UNDOUBTEDLY, the most important point in the treatment of heart disease is rest. In the most severe stages this is absolutely necessary, for in this condition syncope is almost certain to follow any attempt at work, or even walking. The use of physiological mechanics is all-important in the treatment of heart cases for while much can be done by the use of drugs, yet nothing takes the place of rest. In fact, there are many cases in which drugs appear to be utterly useless, and it is possible to obtain improvement only by the use of long rest, lasting for weeks or months. The reason for this is very evident; anything which reduces the number of beats of the heart, naturally reduces its work, and in a diseased organ this becomes a matter of moment. To use a disabled engine as little as possible renders its existence for a longer period possible. So it is with the heart which is the machine from which life, as we know it, really springs.

Outside of the use of rest it is well to consider the possibility of reducing the quantity of blood that comes into the heart from the right auricle and must be forced by that organ through the lungs and later driven through the body by the left ventricle. There is an old-time deep-seated prejudice against the use of venesection; but it is a question whether this prejudice is not unreasoning. It is true possibly that venesection may be required only in urgent cases, but in these when the right ventricle is dammed with venous blood so that its contraction is imperiled and the stoppage of the heart is threatened it may be the actual means of preserving life. Under these circumstances it seems to be imperatively demanded, and any old-time prejudice against its use should not be allowed to interfere with the doctor's decision. Depletion can be accomplished, however, by other means, such as by increasing the evacuation of the bowels, the kidneys and the skin. For example, by the use of purgatives by which the watery secretions of the bowels are increased, and by the use of renal stimulants, such as the acetate of potash and nitrous ether. Again, by the use of diaphoretics the secretion from the skin can be increased.

When we come to the actual drug treatment of cardiac cases we find, first, the use of the cardiac tonics, of which the most common is digitalis. This drug is undoubtedly very trustworthy and efficient in properly selected cases. It requires a considerable caution in its use for, on the one hand, it is necessary not to over-dose the patient; and, there is also the danger of the accumulative action of digitalis bursting, as it were, with a sudden storm, through the patient's system. While, on the other hand, if not enough of the medicine is given when the sympoms are critical and relief demanded, its administration is worse than useless for it creates a false confidence. Undoubtedly, the tendency of the profession is to err on the side of giving too small doses of digitalis.

Another drug which has lately sprung into prominence is strophanthus. It is an excellent heart tonic, though perhaps not as trustworthy as digitalis. A very efficient way of giving strophanthus is to give it in the form of the tincture in combination with the tincture of nux vomica. If these two drugs are given in equal proportions they produce as a rule an excellent effect, not only upon the heart, but upon the nervous system in general. The citrate of caffeine and strychnine are also excellent drugs in their place, the strychnine being indicated rather where a general nervous tonic is required.

To illustrate the use of treatment in a case of cardiac trouble, permit me to quote the following case, which is that of a man, aged 45 years, who had been under observation for ten years. He first came under my care to be treated for acute articular rheumatism and on each occasion a presystolic mitral murmur was heard while later there developed a tricuspid murmur and the phenomenon of a pulsating liver. For the past few years he has been obliged to stay in bed from time to time on account of his shortness of breath. After each attack he resumed his labor which was severe in character. But in the course of a few weeks he would again be forced to return to bed. Recently, after exposure to severe cold, he developed a cough. His legs began to swell. He went to bed and grew rapidly worse. On examination I found that he was suffering from extreme shortness of breath. His face was cyanosed. He had a small rapid pulse, ranging nearly 150 a minute, while his respirations were shallow and rapid. This condition grew rapidly worse so that I immediately bled him, 10 ozs being taken from him, and I gave him a hyprodermic injection of brandy and 20 drops of digitalis. This was followed by speedy relief, so that within four hours the pulse fell considerably in its rate and his respiration quieted down. He is now in a much better condition, although he still presents, of course, the characteristic appearance of mitral stenosis. His face is congested. He shows the characteristic club finger ends and has a dropsical condition of the feet and ankles. His cardiac impulse is displaced outward and downward and there is also a marked epigastric impulse. On listening over the cardiac area I find a long presystolic murmur at the apex with a tricuspid systolic murmur over the sternum. Scattered throughout his chest are numerous sibilant rales, while there is absence of breath sounds at the base of both lungs. I gave this man fifteen drops of the tincture of digitalis every four hours and on the following day his pulse gradually sank lower and lower and two days later it fell to eighty, when I reduced the dose of digitalis to 10 drops every two hours.

His physical condition also improved so that his ankles were no longer dropsical and the dullness at the bases of his lungs was not so noticeable. Under treatment and rest the patient improved until the tricuspid murmur was no longer noticed.

This form of heart disease is one of the most frequent which the general practitioner is called upon to treat. Mitral constriction strains the heart to its utmost and while compensation can be maintained moderately well when the patient remains at rest, it becomes a dangerous condition when the patient is forced to work; for the additional strain upon the heart reduces its compensation, backward pressure is exerted upon the lungs and right ventricle as a result of which tricuspid regurgitation takes place followed by dropsy, pulsating liver, venous distention throughout the body and albuminous urine. The action of the heart at the same time is irregular, rapid and feeble in impulse, but fortunately for the patient he is able frequently to recover to a great extent from its serious condition. Undoubtedly many physicians have patients who have been almost in a dying condition a number of times from which they have recovered to a comparative degree by careful treatment.

In giving the tincture of digitalis it is well to watch the patient carefully, and if the disease does not produce material improvement within 24 or 48 hours, it is well to increase it. Many physicians never begin with less then 15 minims every four hours which makes a dram and a half in the 24. If improvement does not set in,

the dose can be increased to 15 minims every three hours or 20 every four hours continually, but these doses must be watched for the object is to get a speedy impression upon the heart and then withdraw as much of the drug as is not necessary. The bugaboo of the accumulative effect of digitalis still lingers around this drug. This depended upon the theory that the patient might take harmless doses of the drug for some days or weeks and then suddenly a poisonous effect would be noticed which might end even in sudden death. In the case of digitalis this is due to the fact that it is not eliminated as rapidly as other drugs, so that after a time the interval not being long enough the drug is reabsorbed into the system and its toxic effect is noted. However, if the drug is given for a long period in the amount of half a dram or 48 minims a day this effect as a rule is not noticed, and in this way digitalis may be given for longer periods of time without producing any serious results. The advantage which strophantus is supposed to have over digitalis is that it does not increase arterial tension. Five minims of the tincture of strophanthus is equal in dose to 10 or 15 of the tincture of digitalis. for it was found that weight for weight strophánthus is the more powerful drug, so that its officinal strength has been reduced from one in ten to one in twenty, while the strength of the tincture of digitalis is one in eight. The other remedies in use in cardiac trouble similar in action, but are not as strong nor as powerful as these two drugs.

There are many points in regard to the use of cardiac tonics in the various forms of valvular disease. For example: There is a dispute as to the action of digialis in aortic regurgitation. It has been criticized by some authorities on the theory that in many cases aortic disease is accompanied by hypertrophy of the left ventricle and that in consequence digitalis is apt to increase the over action of this organ. Again, and what seems to be a more vital objection, is that digitalis lengthens the diastolic interval and that regurgitation occurs in this time so that the amount of blood which falls back from the aorta is greater under the influence of the drug. In consequence there is an increased tendency to cardiac dilatation and a greater probability of syncope resulting from the diminution of the supply of blood sent to the brain. In the experience of many authorities, however, the main objection to digitalis in this form of heart disease seems to be not that it does any special harm, but that it does very little good. It is in cases of mitral disease in which digitalis seems to be especially happy. It is the rapid, feeble and irregular action of mitral disease which is peculiarly benefited. When aortic trouble is complicated by mitral regurgitation then digitalis is of advantage.

The best diuretics for use in heart trouble are undoubtedly the acetate of potash and squills. The so-called diuretic mixture, known as the misturi potassii acetatis composeta is peculiarly useful in this condition. It contains 30 grains of the spirit of nitrous ether to the dose together with 15 minims of the tincture of squills. 20 grains of the acetate of potash and one dram of succus scoparii. The digitalis can be given in this mixture and it makes a peculiarly happy combination in the majority of cases. When the cardiac failure is imminent and a very decided effect upon the heart is desired the digitalis may be combined with the carbonate of ammonia given in 5 grain doses every 2 or 3 hours. The unfortunate feature in regard to this treatment is that it may fail on account of nausea, or on account of the rapid fall of the pulse. It is often well, however, to give the digitalis with water alone considering only the action upon the heart. Taylor, of Guy's Hospital, has found that the action of digitalis is often improved, especially in cases where it seemed to have no effect, by the addition of the tincture of belladonna. This idea occurred to him in experimentation some years ago and he has reported a number of cases in which he met with success.

It is less difficult nowadays to recognize such forms of heart trouble as infective endocarditis. As the treatment of ordinary heart disease has grown to be more scientific there has been still much to learn in regard to the pathology of infective endocarditis, especially as to the role played by micro-organisms, In Bramwell's experiments the introduction of material from ulcerated aortic valves into the blood current of healthy rabbits did not produce any special result. Orth found that if he passed a fine probe down the carotid artery of a rabbit and injured the aortic valves and then injected into the blood vessels bacteria from pus that he could produce experimental ulcerative endocarditis. But he was unable to produce this condition unless he previously injured the valve. As a result of these experiments we might believe that a diseased condition of the valve is necessary to produce infective endocarditis, and when we come to study these cases we find that there is frequently a history of previous rheumatic heart affection. In scarlet fever and diphtheria we find that the majority of cases escape contamination even when bacilli are found in the blood, unless there exists an old valvular lesion. Rheumatism may predispose to disease, but it does not itself produce it unless it is associated with micro-organisms. Osler has found as the result of his study on the subject that 11 per cent. of his cases of infective endocarditis followed puerperal fever. He explains this by the fact that the already poisoned blood of pregnancy becomes charged with material absorbed from the uterus and the tendency to thrombosis occurs. It is probable that all septic conditions of the blood are more or less exposed to this shock and infective endocarditis can follow even slight injuries if the wound becomes unhealthy. There is a peculiar likelihood of this occurring especially in pneumonia at a time when the crisis is expected, or when the inflammatory exudate is clearing away and absorption is taking place. Then, all of a sudden, there may develop a septic endocarditis. Netter has gone over this subject very thoroughly and has found that in endocarditis following pneumonia the same kind of microbes in the valves as in inflamed lungs, and taking the microbes from the pneumonic lesions and injecting them into the lungs of rabbits whose carotid valves had been experimentally injured, he produced septic endocarditis. There is one great peculiarity in regard to infective endocarditis and that is the enlargement of the spleen. Acting as a sort of filter, this organ is especially exposed to the poisonous products which may develop in the blood. It has been found in nearly all post-mortems on infective endocarditis that the spleen was enlarged and diseased. It seems as if this organ supplied the proper food for the development of these microbes.

The treatment of infective endocarditis has not been very brilliant. In fact, the disease as a rule is fatal. Here and there cases are reported in which the ravages of the disease have stopped and the patients have recovered, but as a rule, a permanent cure is scarcely to be expected. As infective endocarditis is generally the consequence of some form of blood poisoning the treatment depends considerably on that of septicæmia. Oliver, who has had considerable experience in this

class of cases has found the most satisfactory results from the use of sulphocarbolate of sodium given in half dram doses three or four times a day. He also administered salol and betanaphthol. Quinine has also been recommended, but its results are doubtful. The ideal treatment of course, in this class of cases would be the injection of some material possessing bacteriological properties, but unfortunately, such preparations which are harmless for the blood and tissues have not yet been developed; possibly the present decade will develop them.

The following case is interesting as illustrating a case of infective endocarditis. The man was a mechanic with good family and personal history. While at his work some months before he struck his chest in the region of his heart but he never was seriously ill until about six months after he was injured, when he noticed that he could not work properly and he suffered from shortness of breath and pain in the cardiac region and his legs began to swell. This went on until he reached such a state that he could not lie down in bed. His movements became painful and a pallid, anxious expression appeared upon his face. His respirations became sallow and rapid, his tongue furred, his digestion wretched and there appeared also great thirst. But, his most troublesome symptoms, he states, were insomnia and shortness of breath. The physical examination exhibited the fact that his apex beat was displaced downward and outward; but there was a greater increase in the deep area of cardiac dullness. A blowing systolic murmur could be heard to the left of the ensiform cartilage and there was also jugular congestion and a pulsating liver. His condition remained about the same for a number of days after coming under my care until one afternoon he had a chill followed by extreme shortness of breath. His pulse became very irregular in a minute and finally he died.

The physical signs pointed to the probability of the disease being due to insufficiency of the triscupid valves. The fact that the patient had profuse perspirations and intermittent fever pointed to the fact that he was subject to infective endocarditis. As to the relation between the injury to his chest and the infective endocarditis, there is probably no doubt that the injury produced the heart lesion and that vegetations appeared and the disease later assumed an infective condition.

On examination of his heart after death it was found that there was no special disease in either the left ventricle or the right ventricle, while there was dilatation of the right auricle, and at the base of the tricuspid valve there was a vegetation which projected into the cavity for nearly an inch. On making cultures from this granulation the presence of staphylococci was demonstrated. Undoubtedly there were three currents produced in the heart action: (1) a tricuspid direct current; (2) a tricuspid regurgitant current, and (3) a current from the left side of the heart into the right side through a perforation which was found. This cardiac condition undoubtedly explains his symptoms, the insomnia being due to the disturbance of circulation in his brain.

—Tincture of soap has been recommended as the best medium for sterilizing edged eye instruments. It not only cleans off the blood or pus, but preserves the edge. The instruments should be wiped and placed in the tincture for fifteen minutes, then wiped again and placed in boric acid solution before the operation. After use they should be replaced in the tincture and wiped and put away.

CASE OF GIANT CYSTOMA OF TESTICLE

BY H. O. SOMMER, M.D., WASHINGTON, D. C.

THE appended cut shows a large tumor of the right testicle which I removed in the service of Dr. Carleton of New York and bears no further surgical interest than to say that it was, of course, necessary to make a longitudinal incision, owing to the size of the scrotum, the tumor being adherent to the skin, etc., but easily shelled out by digitation; also that the identity of the cord up to, and into, the inguinal canal was completely lost as to anatomical parts, being merely represented by a round fibrous structure in which veins and arteries were no longer recognizable and which could hence be safely severed and the end left fast in the inguinal canal and ligated merely as a matter of form.

The size of the growth will be readily comprehended in the cut, since the slight swelling in the left groin extending onto the thigh represents the left and normal testicle; the penis, the patient being in the standing position, also completely retracted into the scrotal skin covering its location except for an opening between the folds of the skin.

Pathological.—The tumor, which I deposited in the Pathological Museum of the Metropolitan Hospital, N. Y., was a Cystoma epidermoidale (*Langhaus*), having the characteristic cheesy contents containing but very fine hairs, and its walls being densely fibrous and about one centimeter thick. The peduncle, which represented the original cord, was about as thick as one's little finger. But a trace of what had been a testicle was present in the cyst wall.

The literature in "The Index Catalogue" is extensive on this subject. It seems to have been a favorite curiosity for practitioners to report. The "International Tet-Book of Surgery" (Warren and others) devotes considerable space for the finer pathology thereof, but neither it nor "Dennis's System" give an illustration of so large an cystoma, though I doubt not many a practitioner has seen one as large.

—In addition to the usual age and the presence or absence of prodromal symptoms, an important distinction between variola and varicella is that the smallpox eruption is worse on exposed parts and is always present on the palms, whereas the chicken-pox eruption is more marked on covered portions of the body and is rarely or never seen on the palms.

CASES FROM MY NOTE-BOOK.

TÆNIA—ASCITES—PLEURISY WITH EFFUSION—A SEQUEL OF TYPHOID FEVER.

BY JAMES C. PATTERSON, M.D., PHILADELPHIA.

ONE irregular practitioner in this town has achieved a great reputation in the treatment of tænia, for he has succeeded in expelling this parasite in some cases after the regular practitioners have failed to do so. The supposed success of this individual, whose name I will not mention, is attributed to the fact that he gives continued larger doses than the regular practitioner is accustomed to employ. The patient from whom this specimen was obtained had gone to the individual I referred to, and had disbursed considerable money, thirty dollars, I believe, for drugs which he prescribed and which he employed in vain. The patient then fell into my hands. In the first place, the patient took a breakfast on the day I began, but just what she had for breakfast is not stated; but during the rest of the day, she had nothing but bread and milk and meat broth, and on the same day was given six doses of ¼ grain or ½ grain of calomel. A patient treated by this plan will take about 1½ grain to 3 grains calomel during the first day of treatment. After the six doses of calomel, there is administered magnesia citrate, one-quarter the amount contained in the usual bottle, and this is taken every half hour until the whole is taken. In this case the following morning the full dose was taken.

℞ Oleoresin of the Male Fern,
Chloroform aa.....¼ oz.
Glycerine .....2 to 4 drs.

and this is followed in an hour or two by a dose of an ounce of castor oil. Now, this treatment has been perfectly successful in a number of cases. I recall cases in which the entire worm has been expelled by this method as a rule, although not by this prescription; but by a remedy containing the tænæcide. My experience has been not to furnish some subsistence to the tape worm. If a child, I would suggest that the dose be modified according to age.

I will next report the case of a little boy who was tapped last week, and one and one-half pints of fluid removed by the canula. Since then the fluid has been dripping away through the orifice thus made. The patient is much more comfortable. Of course, the underlying condition still persists, and the fluid will continue to be poured out into the peritoneal tract and the subcutaneous tissues until the renal condition subsides, if it ever does subside. Now and then there comes a stage in many of these cases of parenchymatous nephritis, when the connective tissue which is always proliferated, to a greater or less extent, even in acute parenchymatous nephritis, there comes a time when this connective tissue contracts, and with the contraction the whole condition of the patient alters. The urine which has been previously scanty, of normal specific gravity, will be poured out more abundantly, the specific gravity will become lower, and the patient and his friends believe that a cure is resulting, but unfortunately in most cases the cure is only temporary, the chronic parenchymatous nephritis has been transformed into an interstitial one; not the cirrhotic or the granular, but the secondary contracting kidney. The ordinary contracting of the kidney or of the cirrhotic kidney begin very insiduously, and are often far advanced before they show themselves. Its anatomical appearance is entirely different from that of the granular kidney. The boy is feeble, and continues much the same. Occasionally hot baths promote action of the skin, diuretics, tonics and the diet, in which meat is very scant, is formed largely of bread and milk. The swelling of the scrotum, also the œdema of the lower extremities is very much lessened. My next patient is a woman, aged forty-nine years. Her family history is good; that is, there is no account of any hereditary disease; her father died of old age; mother of some dropsical disease, and the other members of her family that are living are in good health. She tells us she had good health in childhood, but as she expresses it, she was very susceptible to fevers, and I do not wonder that she says so, for she had yellow fever at twelve years of age. She is a native of Bermuda, and it was there she had this attack of yellow fever. She had an attack of typhoid fever at the age of sixteen or seventeen; and also had a fever which is never seen in this latitude, and this is the peculiar fever known as the dengue, epidemics of which sometime prevail in the South. This fever she had at about the age of eighteen or nineteen years. So you see her statement seems to be justified; at any rate, she has had several severe fevers, yellow fever, typhoid fever, and dengue. The mortality of this latter disease is very slight. Then follows the history of her marriage and the birth of three children. For seven weeks she has suffered from dyspnœa and has been coming to the Out Patient department to be treated for that symptom. She was doing housework. The history of her attack is very meagre; the attack began very insidiously. You may have heard her statement that about nine weeks ago she laid down at a place exposed to draughts, and since that time she has had a dull pain in the lower portion of the right side of the thorax. There was no chill, and if there was any fever it was not severe. This is exceedingly interesting, as it affords an example of the very gradual manner in which a very serious disease may begin and pursue its course. She has never been in bed from this disease until admitted to the hospital, and then went to bed only by order. Naturally, for that pain in the right side and the dyspnœia we must examine the chest, and we find there very marked disease on the right side. When she changes her position she has a slight cough, and this is I believe occasional, and is not attended with expectoration. I might mention one or two other diseases of the lungs to which I will not refer, which are not attended by expectoration. Absolute flatness extends on the right side, and this extends over the entire posterior region of the chest. Tapping at the first and second interspace, I think I perceive the dulness on the right side, but not much absolute flatness as we get behind. But, in the first interspace the resonance is a little tympanitic, which is almost constantly present in large effusions, and it is absent when the effusion is so great as to fill the entire cavity. Here the resonance is somewhat of that tympanitic character, which you do not often get. Now on ausculation, respiration is behind very faint and distant on the right side, and somewhat exaggerated on the left, the left lung being required to do double duty. The patient counting 1, 2, 3, at the base the voice has that peculiar nasal quality that is described as "ægophony," or the bleating of a goat. There is no tactile fremitus on the right side; for on counting 1, 2, 3, I feel none, nor can I feel it on the left side. The situation of the heart is sometimes very important. It is not necessary to state that there must be a large amount of fluid in the pleural cavity on the right side. The heart should be dislocated to the left, and I have no doubt that this is the case. This is often better determined by the stethoscope than by tapping. The apex beat can be heard very distinctly. The heart is not much dislocated; it never is in right sided pleurisy. It seems that the mediastinum is able to resist the pressure. A small degree of effusion on the left side will dislocate the heart;

being shoved very readily by considerable effusion, so far to the right as sometimes to make the impulse sensible to the touch. The liver we find pushed downwards, as is to be expected.

This then is a case of chronic pleurisy with effusion, beginning as chronic cases usually do, in a very insidious manner.

We do not know the nature of the fluid, but it seems to me it will prove to be serous. The purulent effusions are secondary and are a more intense affection, especially that following scarlet fever and pneumonia. The only question we have now to consider with reference to the treatment is whether we should immediately remove the fluid by an operation or to try the effects of medicinal treatment for a week, and decide just what to do then. Her general condition is excellent; she has not pursued any medicinal treatment as yet, and I see no reason why we should not try medicinal treatment by local applications to the chest before removing the fluid by aspiration. With this object in view we will have counter-irritants applied to the chest, blistering it in the following manner: I will recommend a plaster about 3 inches by 4, and apply it somewhere near the base of the lung, and keep it on for about two hours, in this case we may have to leave it on about three hours, and then again it may necessary to leave it on for about four hours. Every morning a purge should be given, as the sulphate of magnesia, at least 6 drachms in concentrated solution; then she ought to take steadily the following prescription in half-ounce doses:

℞ Iodide of potassium.....jss. dr.
Tr. Digitalis .....jss. fl. dr.
Tr. Scillæ .....iij. fl. dr.
Decoc. Scoparius .....q.s. ft. vj. fl. dr.
M. Sig. Teaspoonful three times daily.

If we can obtain a specimen of the fluid by the hypodermic syringe we can learn something about the nature of it, as to whether it is serous or purulent. If microorganisms are found the presumption is said to be that the inflammation is tubercular; on the other hand, if the inflammatory process is due to the pneumococcus or the streptococcus, we are more apt to find pus.

Now a word or two about hemorrhagic effusions; that is indicative of tuberculosis. Now, this has not been my experience, and even if it were tuberculosis, there would be nothing astonishing in the fact, because according to the present doctrines, the vast majority of pleurisies are tubercular; but in my experience hemorrhagic effusion has been more apt to occur with any other form of inflammation than tubercular. Otherwise it would be much more common than it is. The idea appears to be entertained by those who have written on the subject, that hemorrhagic effusion was indicative of pleurisy. In my opinion this is a delusion. According to some authorities there is danger of delaying the removal of the fluid. I have never known a case of sudden death from large effusion, although it is said to occur from various causes, as sudden syncope, getting out of bed in a hurry, from embolism, or from rupture of the pulmonary arteries or some artery in the brain; or, it is occasionally due to twisting the vena cava, that the heart was dislocated to the right, and in this case the vena cava became twisted.

It is possible that an ordinary hypodermic needle will not reach the sac, and we may not succeed in getting a specimen of the fluid, but there is no harm in making the attempt. The needle does not puncture deep enough to get much of the fluid. It is probable that just the point of the needle reached the serum. Next week we may aspirate.

The next patient exhibits one of the sequels of typhoid fever. Her convalescence has been delayed by the occurrence of numerous abscesses upon the surface of the body. There is one now forming on the calf of the right leg. She has had abscesses on both arms near the insertion of the deltoid and on the right thigh, and now one is forming on the calf of the right leg. The pus in such cases showed impure culture. The streptococcus organism was found and no other. From the eruption from the hypodermic needle, you might perhaps suspect this was the cause of the so-called abscess; but she has never been punctured in the calf. There is no question that the hypodermic needle injection might have had something to do with these abscesses, but not all. A good many years ago I treated a number of cases of erysipelas by injecting hypodermically and washed the face with a solution of bichloride of merucury, as much as 1/6 grain at a time, to head off the inflammation, and I did head it off. The treatment is a good one; but there are two objections to this mode of treating erysipelas: It is exceedingly painful, and it is very liable to be followed by abscesses. At any rate, in the cases in which I employed this hypodermic injection, abscesses occurred. Now, I say I have never been able to get any satisfaction. Corrosive sublimate is the most powerful antiseptic we use, and yet this very substance gives rise to abscesses, in the majority of cases of which I am now talking. The most common sequel of typhoid fewer is the falling out of the hair. Patients will consult their physician about this annoying symptom, and will demand something for the purpose of preventing this falling out of the hair. If called on to prescribe, giving something that will not be injurious. I had attended a young lady with typhoid fever, and after convalescence her hair began to fall out, when she applied to me for some hair tonic. Of course, I prescribed something, and the hair grew in, and years passed on and we both got older, and she being a woman, got older than I am. Her hair began to fall out again, but not from typhoid fever. She reminded me of the excellent lotion which I had prescribed for her. Between us we managed to find out what the prescription called for. She remembered the date of her illness and the month and the year in which I had written this prescription, and I took the trouble to go to the druggist and ascertain what it was, and in a short time I found it was Tincture Sapo Viridis. It was flavored with some substance which had an agreeable odor. It is an excellent thing for cleaning the hair, and her hair came back, and I received credit for the cure. The hair will undoubtedly return in most cases. I suppose there are cases of permanent baldness following typhoid fever, but they are exceedingly rare. There are kinds of sequelæ of typhoid fever, and one is that of the typhoid spine, which occurs in such a small number of cases, that it does not seem as if typhoid infection had anything to do with it. The patient suffers with pain in the lower part of the spine, for some weeks, and is more or less crippled. Rheumatism may appear in this part of the body; in other cases it is a pure neurosis. It may be the cause of hemiplegia, from effusion; there may be aphasia. In the case of this patient, in addition to local treatment there should be administered tonics and nutritious food, and in the course of time, I think she will be thoroughly restored to health.

—Recently a patient in a London hospital, to whom applications of pure oxygen gas were made for the treatment of a skin disease, developed a luxuriant growth of hair upon the skin exposed to the gas, and it is said that similar treatments are being given in London, with good success for the cure of baldness.

THE TREATMENT OF CHLOROSIS.

Some ten years ago Dr. Austin Flint published a short article on a saline chalybeate pill which he had formulated for use in cases of anemia and renal diseases. According to Flint's prescription the pill contains all of the important inorganic salts of the blood, in about the same proportion as found in the blood with the exception of an excess of the chloride of sodium and the introduction of half a grain of reduced iron. The writer has used this pill now for some ten years and has found it so satisfactory that he gives it in a great many cases, especially of chlorosis. The improvement is possibly no greater than that seen after use of Blaud's pill, Gude's pepto-mangan or some other good form of iron, but it is a very pleasant way to give these drugs and it is remarkably even in its action. The pill, as formulated by Dr. Flint, is as follows:

Sodium chloride	3 drachms
Potassium chloride	9 grains
Potassium sulphate	6 grains
Potassium carbonate	3 grains
Sodium carbonate	36 grains
Magnesium carbonate	3 grains
Calcium phosphate	½ drachm
Calcium carbonate	3 grains
Reduced iron	27 grains
Carbonate of iron	3 grains

M. Make 60 capsules.

It is known in the drug trade under the term of the "pill Chalybeate Tonic (Flint's)" and the writer has never had any trouble in getting it under this designation. Two or three pills should be given after each meal for some period. The blood count will be found to improve in rapid ratio with the other symptoms.

Sometimes in chlorosis which is associated with amenorrhea a combination more than the ordinary is indicated; at such a time some such preparation as that suggested by Fothergill of arsenic, black pepper, aloes and myrrh, in addition to iron, is called for. The following is Fothergill's prescription:

℞ Acidi arsenosi	gr. i
Ferri sulphatis exsiccati	ʒss
Pulveris piperis nigri	ʒi
Pilulæ aloes et myrrhæ	ʒi

M. For 40 pills.
S. One twice a day, after meals.

Prof. Goodell has also suggested for this same condition, which is often associated with neurasthenia, the following combination:

℞ Tincturæ ferri chloridi	ʒiiss
Hydrargyri chloridi corrosivi	gr. ij
Liquoris arsenici chloridi	ʒiiss
Acidi hydrochlorici diluti	ʒv
Syrupi simplicis, q. s. ad	ʒiv

S. Teaspoonful in water three times a day.

The following is an old time favorite, suggested by Prof. Francis Gurney Smith; it certainly contains a number of well-known drugs, which should make it effective:

℞ Strychniæ sulphatis	gr. i
Acidi arseniosi	gr. ij
Extracti belladonnæ	gr. v
Quiniæ sulphatis	
Pulveris ferri, aa	gr. xv
Extracti taraxaci	ʒss

M. Make into 40 pills; one after each meal.

A standard prescription for anemia occurring in children where it is desirable to get the use of effective drugs in a pleasant prescription is the following prescription or the one below it:

℞ Tincturæ ferri chloridi	ʒij
Acidi phosphorici diluti	ʒiij
Spiritus limonis	ʒj
Syrupi simplicis	ʒiiss
Aquæ ad	fʒvi

Sig. One to two teaspoonfuls after each meal.

Or.

℞ Ferri citratis	ʒij
Aquæ aurantii florum	ʒvss
Syrupi simplicis	ʒss

Sig. From a teaspoonful to a tablespoonful thrice daily.

MODERN METHODS OF VACCINATION.

Dr. S. M. Copeman, in the *Lancet* for December 21, 1901, gives the history of the so-called national vaccine establishment from its foundation in 1809, under Dr. Jenner, to the present day. A brief description is given of the methods at present employed by the government in the production, preparation, and storage of vaccine lymph, and of the work performed by the staff. A warm solution of boric acid is the best solution for use in disinfecting the skin of the arm, and the best and simplest form of instrument is the ordinary triangular-headed surgical needle. The lymph should be blown out upon the area of skin which has been cleaned and disinfected. The skin, put slightly on the stretch, is then scarified through the droplet of lymph. In this way the corium is thoroughly opened up, and the emulsion brought into intimate relation with the cells of the true skin. The author reports the results of a series of experiments which show that, whereas human smallpox material could not be got to "take" directly on the calf, nevertheless results typical of ordinary vaccination were obtained when the strain of lymph, after inoculation with it of a series of monkeys, was again transferred from the inoculation vesicles on the monkey to the epidermis of the calf.

Obstetric Aphorisms.—The Cincinnati *Lancet-Clinic*, of August 3, 1901, quotes the following from the *Indian Lancet*:

1. Never rupture membranes unless you are prepared to finish delivery at once, if necessary, or unless you confine the patient artificially within a limited period of time.

2. External measurment of pelvis must be practiced to yield trustworthy results.

3. The external (Baudelocque's) diameter is never reliable.

4. The distance between the crests should be about an inch greater than it is between the spines. Equal distances or a larger interspine indicate a deformed pelvis.

5. Contraction at the outlet is extremely rare, and if it occurs it is usually the result of an ankylosed coccyx.

6. If the index finger can touch the promontory there is always a reduced conjugate diameter.

7. If, on the introduction of two fingers, the middle one does not reach the promontory, the conjugate is normal or more than normal.

8. Whenever the whole hand can be passed through the superior strait, there is a possibility of withdrawing the child through the natural passages.

9. If the hand cannot be passed Cesarian section is indicated.

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NEW YORK, MAY, 1902.

So nigh is grandeur to our dust,
So near is God to man;
When duty whispers low "Thou Must,"
The youth replies "I can." —EMERSON.

THE HIGHER EDUCATION.

THE time is rapidly approaching when all medical schools of any standing will require a candidate for admission to possess the degree of bachelor of arts, before he can be admitted to the study of medicine. Some of the larger university schools are already considering this step as an evidence of fitness more simple than State examination. With this necessity for higher education comes, as if by prearrangement, vast sums for the endowment of schools and universities, in order that this higher plane may be reached and maintained, and by the establishment of scholarships enable those who desire and are found worthy to avail themselves of this important aid.

We hope the time may come when a prerequisite to the study of medicine will also include an examination as to the personal fitness of candidates for the higher position which they seek; a determination of the natural fitness of the man for such a calling, independent of the question as to whether he can gain a livelihood by this means. Some of the best men in the profession, for lack of time or money, were unable to obtain a literary degree, no doubt much to their regret; but the time is coming when all such will be able to obtain scholarships in universities endowed for this purpose.

One of the most colossal and princely gifts to higher education ever bestowed—twenty-five millions—is that of Cecil Rhodes, who, amongst other noble legacies, established one hundred scholarships of fifteen hundred dollars each per year for three years, at Oxford, for students of our own country, regardless of race or religious opinion. Personal character and manliness are to count as much as scholarship. As to how the provision may be practically carried out, President Thwing, of Western Reserve University, suggests that "The bequest of Cecil Rhodes is significant of the increasing power of education for the organization and betterment of humanity. This power has rapidly increased in recent decades. Mr. Rhodes's bequest is both a sign and cause and a result of the increase. This increase in the power of education is subject to various perils. Chief among these perils is that of an undue emphasis upon intellectual fact and force. However important the intellect may be, the will and the heart are of greater importance. The method of selection of candidates who may receive his bounty which Mr. Rhodes suggests is, on the whole, wise. The application of Mr. Rhodes's bequest to the colleges of each State in America should occasion no particular difficulty. The executive government of a State should be able to choose the best men with comparative ease."

The medical course at Oxford is now five years, with one or two additional, required in post-graduate study, unfortunately not of a clinical character for lack of hospital service. At present medicine can only expect from Oxford help in preparing students in the literary department, to enable them to enter the regular schools of our profession, and this will be found a great help properly used.

Last year the gifts for educational purposes from private persons in this country are said to have exceeded one hundred and seven millions of dollars, and the present year bids fair to exceed this record for the highest interests of humanity. Carnegie and Rhodes stand breast to breast as the foremost educators of the world.

Look at the munificent donation of Mr. Carnegie to be used in founding a university for higher education; in other words, to enable exceptional scholars to make their particular study a life-work!

The purposes as stated by the founder are superb, practical, and will be found efficient aids to universities promoting the higher education in all departments.

The five million endowment of Harvard Medical School is an event of which we may all feel proud, and there can be no doubt that through this munificence great good will result to the profession, and to the public, through the opportunities which it will afford for higher education. This school has raised its standard from time to time until it is above most of its peers, and its recent endowment should enable it to hold the position it has taken, against any competition.

With the facilities which the stronger universities can offer, it ought not to be difficult to put a stop to commercialism in medical education by starving out the weaker and uncalled-for schools, of which there are too many.

With a view to increasing the standard of scholarship in the College of Physicians and Surgeons the University trustees have decided to raise the entrance requirements next year. Heretofore admission to the first year class of the college has been open to any student who complied with the minimum requirements for a medical student's certificate as those requirements are defined by the laws

of the State of New York. The law provides that a student who obtains thirty-six of the forty-eight necessary counts may enter upon the study of medicine, with one year in which to make up the remaining twelve counts.

After July 1, 1902, no student who has not the full forty-eight counts to his credit will be admitted to the first year class at this college. A still more radical change will go into effect on July 1, 1903, when no student will be admitted who has not obtained a medical student's certificate in either of these two ways: First, by having successfully completed at least one full year's course in a college or scientific school in the United States, or having pursued an equivalent course of study at some European institution; second, by passing an entrance examination conducted in June of any year by the college entrance examination board, or in September by the committee on entrance examination of Columbia University.

While it is the expectation that these new entrance requirements will materially reduce the number of students, it is confidently believed that the high standard will result in attracting the better class of medical students to Columbia, and will pave the way for raising the standard of admission still more in the near future.

Thus it may be seen that the educational standard is fast pressing onward to keep pace with the increasing facilities which are being constantly afforded by the liberality of individuals possessing private fortunes, and let us hope that this good work may continue until our educational institutions are so endowed as to be independent of income from students' fees.

LONG DISTANCE CONSULTATIONS.

WE all know the layman who stops us on the street and wants to know what is good for his cough, or who leads us to talk shop in social gatherings and who draws us on from glittering generalities to practical advice as to his own diet, or the use of drugs. When he has finished, sometimes before, we realize that he is trying to get for nothing, something which cost us much hard work and expense and which constitutes our stock in trade. But there are physicians as well as laymen who use well-informed and good-natured physicians as cat's-paws. "Some time ago," says a friend, "I delivered an address before a medical society at some distance. The trip cost me quite a little in effort, expense and loss of income. My compensation consisted of three items: (1) The pleasure of imparting useful knowledge; (2) the gratification of vanity; (3) the advertisement of my supposititious ability to relieve a certain kind of suffering. Items 1 and 2 would not feed and clothe me, item 3 might. Item 2 was not of much importance, it was not mentioned by my hosts nor did it seriously enter into the calculation. It may seem indelicate to mention item 3, but as it was very candidly, though euphemistically mentioned in the invitation, there is no need to pretend that it did not exist. A considerable portion of the leisure of this trip was spent in listening to a lengthy account of a chronic case. I have spent much time and money and have abandoned a fairly lucrative general practice in order to diagnose and treat just such cases. At the expiration of an hour's private conversation, we had elicited the following points: The physician in charge had not succeeded in making a physical examination which could inform him of the state of the organs in question, the history was not significant, he had not the slightest idea of what ailed the patient nor of what should be done to relieve the condition, he had a still less marked notion of allowing any other physician to derive any pecuniary benefit from the case but he hoped to receive gratis a diagnosis and a plan of treatment."

The medical monkey who uses his colleagues to pull chestnuts from the heat of original research and close study, has a variety of methods. Sometimes he brings his wife to a better informed physician and applies the results of his domestic clinic to other patients. Sometimes he is free in calling consultations for charity cases but yields with the greatest reluctance if the patient has money. Sometimes he writes to the editor and tells how much he loves the journal and wants to know how he can relieve his puzzling case of impotence—with details as to the sexual life which are more interesting than the choicest columns of the *Police Gazette*. Sometimes his social relations with his medical colleagues consist of a life-long mendicancy to make good the deficiency of early training or mental acumen.

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PROPER LIMITS OF INFORMAL CONSULTATIONS.

We do not mean to censure the pursuit of knowledge from one's fellows nor to ignore the duty of each physician to add to the common store of medical information, but we believe that, with few exceptions, definite advice as to definite cases should be solicited only in a fair, business-like way, at formal consultations. No man has a right to sell for his own profit that which he has begged or stolen from another. But the matter is by no means merely one of business fairness. If a physician cannot by palpation, percussion, urinary analysis, etc., or the consideration of symptoms, arrive at a diagnosis, how can he expect his hazy account of the case to lead another to the right conclusion? Or, if understanding the conditions present, he cannot deduce the appropriate treatment, how can he do justice to the patient even with second-hand help from without?

It would be absurd to claim that a physician should never ask some hint from his friends, but we do hold that if a man cannot manage a case by himself, there is only one course open, in justice to his colleagues and in mercy to the patient—a formal consultation. But every rule has its exception and the recent graduate may well have some counsellor to whom he may freely go for advice as to most of his patients. It would be obviously impossible for him to have a consultation in every case, but there are plenty of ways in which he may assist his preceptor and thus honestly earn the advice which he needs.

PRELIMINARY TO BLOOD EXAMINATION.

IT is our experience that the majority of general practitioners are either unfamiliar with modern methods, or perhaps have no time in which to carry out full examinations of the blood, so that a few words on the maner of procedure for the obtaining and preparation of specimens for expert analysis and its consequent diagnosis by those who make such a work a specialty may not come amiss at this time, and even a few hints may be of value to those who are fully competent to make such researches. In the first place there are certain well-defined rules to be followed if the fresh blood is to be examined immediately, and the chief of them is: *Do not take the specimen immediately after a meal* or *any shock or excitement of the patient.* Another: Disabuse his mind of any idea of physical torture or pain in procuring the sample by simply stating that it does not hurt any more than an ordinary pinprick, or even as much, which is the truth.

All the preparations necessary for the puncture, *as claimed by our text-books, are mostly humbug.* The lobe of the ear or, preferably, the end of one of the fingers is chosen. Wash the part well and apply antiseptics if you wish to make an impression, but still bear in mind that the blood itself is the best known antiseptic, and if it flows freely, a few drops, there is no danger of sepsis. If no blood-needle or lance is present, use an ordinary sewing needle which should be washed in vinegar or acetic acid. If the finger is taken, make a quick puncture, reaching well down or through the derma, then wash the part (with a pointed piece of paper) with one or two drops of the blood, wipe off the excess, and then proceed to get what is necessary for the examination. If a count of the various blood cells is desired a simple way is to have a mixture of distilled water and sodium chloride (2 to 3 per cent.) and to 99 drops of this add one drop of the blood in a perfectly *clean tube or bottle,* shake thoroughly and *cork tightly.* Do not neglect to state on the label the portions used. If paraffine or wax is used on the cork, this will keep perfectly for forty-eight hours or longer without any material change in the corpuscles. The percentage of hemaglobin can only be determined from the perfectly fresh-drawn blood, and therefore must be determined either at the bedside or at the office. Many prefer using cover-glasses for the preparation of "smears" for bacteriological staining, but much better results can be obtained from the ordinary glass slides or slips. As the mode of procedure is the same in both, a description of the latter will suffice. Take *new* slides, wash in alcohol and dry. By pressing from above downward towards the tip of the finger a fresh drop of blood will appear on its surface, to which touch one of the slips, thus obtaining a drop. Cover this with a second slide, press gently but evenly and a film is obtained on both.

Grasping the ends of the slips, which now lie one over the other, at the ends with the thumbs and index finger, slide them very quickly but steadily apart in a horizontal position, thus procuring an extended and uniform "smear." Allow to dry thoroughly (takes four or five minutes) then immerse in equal parts of ether and alcohol for from twenty minutes to half an hour. Dry by simple exposure to air. No heat is to be used until the staining process is under way. The slips so prepared are now ready for packing and taken to the office or sent to the examiner. Tissue paper and enclosure in cotton in a wooden box serves for the latter. The abrasion should be treated to a simple antisepsis, and a slight irritation only ensues.

QUANTITATIVE TESTS.

THERE have recently been proposed two tests for sugar in the urine, employing the same reagent and depending upon the same principle but differing in the way in which the apparatus is handled and in the amount of urine used. Between these two tests a very material difference of relative reducing power appear to exist, simply because the appearance of the end reaction is not as prompt as it theoretically should be. Such an error can never be entirely avoided, it can be reduced to the minimum only by using a sufficient quantity of urine and reagent. On a sufficiently large scale, the test is reliable, on a small scale it is not.

The fermentation saccharimeter, in which the percentages of glucose are arbitrarily marked on the tube, as the result of comparison of similar tests with watery solutions of known strength, is rather more troublesome and not much if any more accurate than the old-fashioned way of estimating sugar loss by the diminution of specific gravity.

For stomach contents, etc., we are frequently advised to use tests which depend upon the delicacy of certain color reactions. That is to say, the direction is given to dilute the liquid to be examined, until a certain reaction fails to occur and to infer the proportionate amount of the substance tested for. Similar tests are in vogue for rennin and pepsin, a row of test tubes being arranged in order according to strength of chyme contained and the point being noted at which reaction fails.

The standard test for hemoglobin depends upon matching shades of red. The most expert estimate their own error as at least ten per cent. and among different observers, all fairly expert, the difference may amount to twenty per cent.

The inference as to hemoglobin content of blood, depending on the specific gravity method, is another pseudo-quantitative test which assumes that specific gravity depends on hemoglobin alone instead of on the chemic composition of the plasma and the cellular richness of the blood. For slight deviations from the normal, this method is accurate enough, but when there is marked deviation in the way of anemia, the hemoglobin usually falls more or less rapidly, rarely at the same rate as the cells themselves, while any considerable reduction of red cells is usually attended by an increase of white cells. We have been surprised at the rapidity with which the

chloroform-benzol mixture evaporates. Unless with specially constructed scales or with protection against evaporation, evaporation occurs more quickly than a balance can be effected. Of course, if we could be sure that the chloroform and benzol evaporated with proportionate equality, this would not affect the specific gravity but only the total weight of the mixture. Unfortunately, these substances do not have the same rapidity of evaporation. Now, considering all these vitiating circumstances, what chance is there for a man who uses an ordinary, none too delicate, urinary hydrometer, to arrive at an estimation of the amount of hemoglobin in the blood?

From time to time, all sorts of titration tests, especially those dealing with urinary sugar, have been suggested. Most of these substitute a medicine dropper for the burette. In some, the dropper is graduated, in others the measurement is by "drops." A burette in its stand is not an expensive instrument and the stand, especially, can be improvised by any one of ordinary mechanic skill. We fail to see why an instrument that must be held in the hand is more convenient than one which is held in a rack or how any sane person can argue that it is easier to regulate the flow from a rubber bulb than from a pinch-cock, without considering the superior accuracy of the latter method.

Without considering in detail, all of the many "time-saving" and "clinically quantitative" devices, let it be understood once for all, that a test should either be quantitative or qualitative. From the latter, one may usually be justified in using such terms as "trace," "small amount," "large amount," and, very often, these are sufficient for clinical purposes. There is neither economy nor logic in going to the trouble of a quantitative test which is liable to wide margin of error. If we are to guess at a result, let us guess honestly and lazily. If, on the other hand, there is need of a quantitative examination, let us take the slight additional trouble necessary to render the error so slight as to be practicably negligible.

WHAT IS "VALOR"?

IN a recent address to the students at a Brooklyn polytechnic school, President Eliot, of Harvard, took up the subject of personal heroism. He said that the "valor" in the everyday life of physicians, firemen, and engineers was greater than that of the soldier on the field of battle, for the latter had "the inspiration of a mass," while the former were alone. This is quite true, but might not the contrast have been more sharply drawn? There is really nothing remarkable or exceptional in the fact that a man under the inspiration spoken of, and who has been thoroughly disciplined with the sole object of converting him into an effective fighting machine, should be able to face an enemy without flinching. The surprising thing would be his yielding to cowardly impulses under the circumstances, and as a matter of fact, displays of poltroonery on the part of privates in a modern army are as rare as those of heroism, and not only is the courage of the physician, for example, greater, in many emergencies, than that of the warrior in the heat of conflict, but it may be questioned whether, on a fair comparison, the latter deserves to be called valor at all. If it does, then the motto so proudly borne on the Victoria Cross—"For Valor"—actually falls short of its intended significance.

RECIPROCITY BETWEEN STATE EXAMINING BOARDS.

WE learn from the *Medical Standard* that an important step toward the attainment of medical reciprocity between the states was taken at a meeting of representatives of the State Examining Boards of Wisconsin, Michigan, Indiana and Illinois, held in Chicago, January 18. At this meeting the desirability and feasibility of mutual recognition of certificates issued by the several bodies represented were considered. Some difficulties, incident to the difference in the laws of these states were brought out, but these, so far as learned, were not insuperable. A permanent organization was effected for the purpose of carrying these plans into operation, under the title of the "Federation of Reciprocal State Medical and Examining Boards."

It is possible, our contemporary thinks, for such an organization as this to unify the work of the examining bodies in such a way as to remove all obstructions to reciprocity. If its plans are successfully carried out the federation will naturally widen its scope so as to include other states. It is, in fact, conceived as a national organization. This is certainly the right way to bring about the practical result aimed at. The establishment of a national examining board, deriving its powers from the U. S. government is, as our laws now stand, entirely out of the question.

The difficulties in the way of securing the passage of uniform laws in the different states are, of course, very great, but this new organization seems admirably fitted to overcome them. Why should it not undertake the preparation of uniform questions to be used by all the states? The *Standard* also suggests the advisability of adopting a system of differential marking for older practitioners forced to take the examinations, giving proportionately less weight to the technical branches, such as anatomy, chemistry, pathology, and bacteriology.

SPLANCHNOPTOSIA AND ITS TREATMENT.

IN a paper entitled "Floating Kidney Idolatry—A Polemic" (*Medical Standard*, February, 1902, Dr. Achilles Rose maintains that "the importance which at present is attributed to a floating kidney is one of those aberrations of men of science of which we find examples enough in history. It is surprising to observe how much learning has sometimes been employed by serious men to support a theory which appears in a later period entirely unnecessary. Such errors are the more dangerous the higher the authority which pronounces them, and the more generally they prevail. . . There are existing a large fraternity, there is a voluminous literature of recent date giving us a litany of symptoms

and depicting in vivid colors all the mischief attributed to floating kidney. A new specialty has developed, which we may name nephroptosiology. The co-existing gastroptosia is not considered. . . It is an established fact that patients with gastroptosia and general splanchnoptosia have as a rule—but by no means in all cases—dyspeptic or nervous, or dyspeptic and nervous symptoms. My observations have furnished conclusive evidence that these nervous and dyspeptic symptoms may be connected directly with the displacements of the abdominal organs."

According to the writer's experience, supporting the abdomen by strapping it with rubber plaster is the best method of restoring the gastric functions and relieving nervous symptoms, in these cases, and should always be tried before resorting to an operation on the kidneys. He is also convinced that we are not justified in pointing out the floating kidney as being especially the cause of gastric and nervous symptoms in cases of splanchnoptosia.

THE "CREOSOTE" QUESTION.

MERCK'S REPORT for March 15 deals with the important subject of "Creosote Substitution" in a thorough and impartial manner, and proposes a remedy which certainly lays the axe to the root of the evil. The editorial referred to begins with a historical explanation of the fact that for many years past there has been a false as well as a true creosote on the market, the former differing from the latter much in the same way that wood alcohol does from the ethylic product, though, of course, to a less injurious extent. Some sixty years ago, only one substance was known commercially and in medicine as creosote. It had been discovered in the tar derived from beechwood, and owed its name to its peculiar meat-preserving properties. A few years later what seemed to the chemists of that day the same identical substance was found in tar derived from bituminous coal. For many years the belief was universal, both among physicians and pharmaceutists, that there was but one creosote, which might be obtained from coal tar as well as from wood tar. The two kinds were dispensed and administered without the slightest discrimination, and the reports in the literature as to the action, dosage, toxicity, etc., of creosote, were consequently in many cases varying and contradictory. This led to an impression that the drug was exceedingly unreliable in many lines of practice in which it had at first been joyously and hopefully received. Especially was this the case in the treatment of tuberculosis. The use of creosote in this disease did not begin to revive until 1877, when Bouchard and Gimbert published the excellent results which the true beechwood creosote had yielded in a long series of phthisical cases treated by them. The actual chemical status of true creosote had been ascertained and made known to the scientific world about ten years earlier. Nevertheless, even now, the facts are established by witnesses of the highest standing, firstly, that an alarming and reprehensible degree of looseness still prevails in some places, leading directly to the serious dangers of substitution: secondly, that the designating of two different non-equivalent articles by the common name of creosote (notwithstanding the addition of distinctive and qualifying epithets on labels and in books), is regarded by pharmaceutists as a constant menace of liability to careless substitution. The discussion evoked by the presentation to the American Pharmaceutical Association of a memorial embodying these statements, resulted in the adoption of the following resolution:

"*Resolved,* That in the opinion of the scientific section of the American Pharmaceutical Association the term 'Creosote' should be restricted solely to true wood-tar creosote, owing to the great danger arising from the present indiscriminate use of the term."

In order that due heed and sequence might be given to this judgment of the National Pharmaceutical Body, Merck & Co. addressed a circular letter to the wholesale druggists, manufacturing chemists, and importers of drugs in the United States, inviting their practical co-operation for the purpose of dropping coal tar creosote from their commerce altogether. From the answers so far received, it looks as if the entire drug trade were desirous of doing away with the substitution evil with regard to creosote. A mere change of name, as proposed by some, offers, however, no satisfactory solution of the problem. "The druggist's duty, whenever creosote is asked for, whether on a prescription or otherwise," is sufficiently indicated by the public announcement with which the editor concludes: In accordance with their previously expressed decision, Merck & Co. herewith announce that henceforth they will not carry or supply the article called creosote from coal-tar under any name or designation whatsoever; and will not sell anything by the name of creosote except true pharmaceutical beechwood creosote.

SURGICAL TREATMENT OF BRIGHT'S DISEASE.

LAST year Pousson, in the *Gazette Hebdomadaire de Médecine et de Chirurgie,* stated that he had operated in four cases of acute nephritis, to which he added eleven others collected from literature —a total of fifteen cases with four deaths, a mortality of 26.66 per cent. He had operated in three cases of chronic nephritis, in one of which he was completely successful; in the other two the symptoms of intoxication were only temporarily suspended. From these facts he was led to conclude that in certain affections of the kidney the insufficiency of this organ to properly clarify the blood becomes a formal indication for nephrotomy or nephrectomy, the former being the operation of preference.

These results, encouraging as they seem, are now thrown into the shade by the brilliant work of Dr. George M. Edebohls (*Med. Record*), which seems to have opened a new field to surgery. He reports a series of eighteen cases operated upon by him, in which the patients suffered from chronic Bright's disease. The

first of these operations was undertaken for the cure of movable kidney in which there was coëxistent nephritis. Nephropexy was performed. The improvement was so marked that Dr. Edebohls was led to attempt the cure of patients suffering from Bright's disease alone by surgical operation. Of these eighteen cases the first was operated on in 1892. All degrees of severity were present, case seventeen being apparently *in extremis* when she came to operation—yet she made a recovery. All but two of these patients are alive to-day; one died after hysterectomy, eight years after kidney operation; another died after an operation for ruptured tubal pregnancy. Two cases have been lost sight of. Not all of the balance are cured, but all show remarkable improvement and some apparently actual cure persisting for several years. The operation as now performed consists in removal of the fibrous capsule of the kidney. The kidney is then slipped back into its fatty capsule, which is rich in blood-vessels. The result is the formation of a new and rich arterial blood supply in the connective tissue adhesions which form. The increased supply of blood leads, most probably, to gradual absorption of the interstitial or intertubular inflammatory products and exudates, thus freeing the tubules and glomeruli from external compression, constriction and distortion, and permitting the re-establishment in them of a normal circulation. The result of this improved circulation in and between the tubules and glomeruli is the regenerative production of new epithelium capable of carrying on the secretory function.

Further experience is needed to determine whether the newly formed connective tissue may not ultimately undergo cicatricial contraction, and thus the local circulation again become obstructed.

THE QUESTION OF WEAK HEARTS.

THERE seems to be more inconvenience about a weak heart than about a weak head. If a man or a woman be a little weak about the region of the brain it is generally of little consequence. It is a wise provision of Nature that some post or other will be provided if the conduct is fairly bearable; and the lack of brains is too common to excite any particular attention either in the person concerned or in those about him. But when it comes to the question of a weak heart, this organ insists upon putting itself in evidence at all sorts of convenient and inconvenient times. If its possessor finds himself rather late for the morning train, and makes a "spurt" to recover lost time, the exertion is usually followed by such a "bad quarter of an hour" that he resolves in future rather to lose a dozen trains than to risk temporary suffering or permanent syncope. In this way the practical evils which are associated with a feeble heart are innumerable, and will readily suggest themselves to those who possess so unsatisfactory a pumping engine.

But genuine weak hearts are by no means so common as is often supposed. Many a man who takes himself to the doctor for treatment is merely dyspeptic; many a woman owes her symptoms to tight lacing or insufficient feeding. If the dyspepsia be cured or the tight lacing be dispensed with, the symptoms of heart weakness will disappear. Even when the heart is genuinely weak, the weakness is not always due to special disease of that organ. It may be only a part of general weakness of the whole system, which is easily curable. The late Sir Robert Christison, one of the most eminent of British physicians, used to smile at certain persons who were always complaining of weak hearts. "Gentlemen," he would say to his students when lecturing on digitalis, "gentlemen, the best tonic for a weak heart is a good, brisk walk." Not a doubt of it. The majority of weak, flabby hearts are weak and flabby because every other muscle in the body is weak and flabby, and this general weakness and flabbiness is due to want of vigorous use. Exercise of the legs and back and arms gives additional and much-needed exercise to the heart, and the heart grows strong by vigorous exercise exactly as every other muscular organ does, for the heart is a muscle. If a man has no organic disease of the heart, no enlargement, and no functional disorder, plenty of brisk walking with occasional playing of golf or tennis will soon dispel his breatlessness and heart weakness, other things being equal. The secret is the muscular inactivity of the modern town man, which is the parent of more ill health than any other single cause whatever.

NEURITIS OCCURRING IN THE COURSE OF INFLUENZA.

THE general pain and aching which mark the onset of influenza at once bring up the question of the different nerve affections which may occur in this disease. It has been common to consider that functional neurosis may occur at any time during an attack of influenza, but that local neuritis is rather a sequela. It has been the common experience in influenza that it lasts much longer than is usually supposed. Ten years ago, when the first marked epidemic seen in several years occurred, it was looked upon rather as a joke and it was not until a number of deaths occurred and lingering remnants of the disease cropped out from time to time in other cases that treatment was severely carried out.

As a rule, when a patient recovers from acute disease the general condition improves nicely; he sleeps refreshingly, his food is nourishing and his tonics build him up, but there is apt to follow influenza a period of depression in which the patient does not seem to recover properly. There are many depressing factors; for example, he finds upon walking, possibly that he has a sciatica or the neuritis has run into the calf or the toe, or we may find a neuritis in the arms. These attacks are different from the muscular pain which appears earlier in the disease. The most common form of neuritis is, undoubtedly, that which occurs in the arms. At first the disease seems to be hard to diagnose, for the

pains radiate up into the neck, down the thorax and finally down the arm. For a time the painful point seems to be found in the cap of the shoulder and along with this there comes a numbness and tingling along the nerve course. These sensations show that the active process has spread along the radial or the ulnar nerve and that it obstructs and interferes with the nerve impulses distributed to the hand. It is in the region of the biceps that it is easier to find the actual inflammation of the nerve. As the arm is generally used to a considerable extent it is undoubtedly true that the nerve exhausts itself in its effort to transmit its impulses, and, therefore, wasting may appear in this muscle following a doughy hardness. When the disease has gotten this far the restoration of function is somewhat uncertain. The use of electricity and massage has been of the greatest service in the past, and does more for permanent recovery than anything else in theapeutics.

When it comes to the question of neuritis occurring in the abdomen and thorax there at once spring into prominence such serious symptoms as failure of the pulse, profound vomiting, respiratory failure and loss of consciousness. In these cases the poison seems to have settled in important nerve trunks and not in those of less vital import.

When it comes to the question of treatment in these cases the first and most vital is the question of rest. Rest is an absolute necessity without which it is impossible to benefit the case. The judicious use of electricity has done good in many cases but used in the earlier stages it has done harm, as is also true of massage. Counter-irritation has been disappointing in its effect, while repeated blistering has also been very unsatisfactory. The use of heat in the early part of the disease has often been soothing and stimulating, especially when the whole limb or trunk can be enveloped in moist steam or bathed in hot flannels. The use of morphine has seemed to be of great benefit, possibly by enforcing the rest which is so vital for improvement, but the use of atropine for chilliness, the pulmonic conditions and the excessive sweating has not been encouraging in the prevention of neuritis. It is rather on the use of prolonged, early and continuous rest, which allows the disease to terminate naturally, followed by carefully regulated exercise with avoidance of over-exertion, that dependence should be placed.

PROF. NOVY'S "DISCOVERY."

IT is now several months since Prof. Novy's so-called discovery of "Benzozone" was heralded by the lay press in flaming type, as "an absolute intestinal disinfectant and antiseptic," with the statement of the wonderful effects upon five students who had submitted to experimentation.

It was then stated that Prof. Novy would shortly issue a detailed report of his investigation, but so far we regret to say we have not seen it, although Prof. Novy was quoted as having said that he had concluded his laboratory tests.

The methods pursued by Prof. Novy in his work of experimentation were said to be simple. To the five students was fed nothing save sterilized milk. Its contents of animal organisms were determinable. The micro-organisms produced by the body were also determinable by analysis. But by means of the "benzozone" there was brought about a total destruction of these poisons. At each meal time the five students went to the laboratory and had a dose of "benzozone." Then they took their portions of sterilized milk. Repeated chemical analyses were made of the bodily refuse of these students, and the results were very flattering. If "benzozone" is so efficient in ridding the healthy body of the poisons with which it is filled, it is the belief that it will also serve in case of bodily breaking down to carry off the organisms which, if left in the body, would produce Asiatic cholera, typhoid fever, dysentery or other similar diseases.

While we have no disposition to hurry Prof. Novy in his work, life is so short and human suffering so urgent that we wait somewhat impatiently for the boon which is expected to result to humanity.

THE long and active life of Edward Everett Hale shows that it is not hard work alone which kills, for Dr. Hale is still with us in prime health and spirits, fully equal to his daily duties, which are more than those of many with half his years.

The admiration that is felt for him is well-voiced by numerous speakers and writers in connection with the celebration of his eightieth birthday, and the TIMES wishes to add its compliments and best wishes.

It may be said of him that he is a man "eighty years young," with "a country" of which he is proud, and one which he has had much to do in shaping. It is the earnest wish of all that he may live to do much more for humanity and progress.

Joseph J. Kinyoun, M.D., Ph.D., late Surgeon of the Marine Hospital Service and Director of the Hygienic Laboratory at Washington, has assumed the directorship of the Biological Laboratories of the H. K. Mulford Company at Glenolden, Pa.

Dr. Kinyoun has not only served the Government by being delegated special representative to the International Medical Congresses, by being late Surgeon of the United States Marine Hospital Service and Director of the Hygienic Laboratory at Washington, but also by representing the Government on several occasions in the investigation of the progress of serum organo-therapy and infectious diseases at home and abroad, in Berlin and Paris particularly, Europe in general, and Japan. Of necessity his work carried him to and in contact with Professors Koch, Behring, Pasteur and Roux, under whom he received special instruction and enjoyed the advantages of the study of bacteriology and allied subjects; this, together with the natural tendency of his talents, that of original bacteriological research, peculiarly fits him for the office he now assumes.

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PROGRESSIVE MEDICINE, Vol. I., 1902. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 452 pages, 5 illustrations. Per volume $2.50, by express prepaid to any address. Per annum, in four cloth-bound volumes, $10.00. Lea Brothers and Co., Philadelphia and New York.

The reasons for the great success of this periodical are not difficult to discover. The editors of the different departments are men of the highest standing as teachers and practitioners, and the selections which they make from the world's current literature for abstraction and critical review may be confidently relied on to represent all that is best in the most recent medical writings. The contents of each volume are chosen with the view of presenting what will be of the greatest practical value to physicians, no matter what may be their line of practice or the nature of their work.

In Volume I. for 1902 the surgery of the head, neck and chest is considered by C. H. Frazier. The account of recent wonderful progress in the surgery of the Gasserian ganglion, and of the heart will at once attract the attention of all thoughtful medical men. There is no physician who can afford to overlook the immense value of the knowledge that a wound of the heart may be operated upon with as little hesitation as a wound of the brain, and that in pericarditis with effusion, tapping the heart is entirely practicable.

The section on infectious diseases by F. A. Packard deals with typhoid fever, tuberculosis, and the various eruptive diseases, the constant progress in the study of which is revolutionizing all our previous ideals regarding their diagnosis and treatment.

Floyd M. Crandall writes of the diseases of children; the importance of pediatrics to the general practitioner is daily emphasized and a knowledge of the recent advances in the science of infant feeding has been rendered absolutely necessary.

The section on pathology by Ludvig Hektoen is a summary of the work being done in a science which underlies every department of medicine and yet with which it is impossible for the clinician to familiarize hmself unless studied through some such medium as the present.

Laryngology and Rhinology are written of by St. Clair Thomson, their relation to general diseases coming in for special consideration.

R. L. Randolph's section on otology concludes the volume, discussing various problems of otology which bring it into relation with the general practice of medicine.

The very complete index which accompanies the book renders it easy to consult. These quarterly volumes may be regarded as a progressive text-book of medicine, containing as they do contributions which cover every field of medicine and surgery, and written by men who know exactly what is of the greatest value to the practitioners for whom they write.

A DICTIONARY OF PRACTICAL MATERIA MEDICA. By John H. Clarke, M.D. In two volumes. Vol. I., pp. 951. Octavo. London. The Homœopathic Publishing Company, 1900. Price, $15.

This dictionary has been prepared for the purpose of indicating the symptoms upon which drugs should be selected for administration in smaller doses. Nine hundred and forty-seven drugs are mentioned in the text. The name of the drug in the arrangement is followed by its synonyms, then follow clinical uses, characteristics, relations, causation and symptoms. The symptomatology is concisely condensed for those who wish to study detail, but under characteristics the author has included the salient points of the drug in consecutive readable text, which gives a good bird's-eye view of the action, with very little trouble. For those who wish to become familiar with the indications for the use of drugs in smaller doses, there is no better book that we know of.

THE PERITONEUM. By Byron Robinson, B.S., M.D., author of "Practical Intestinal Surgery," "Landmarks in Gynecology," and life-sized chart of the sympathetic nervous system. Part I. Histology and physiology with 247 illustrations. Chicago Medical Book Co., 1899, pp. 406, with pp. 103 of bibliography. Large octavo. Second edition.

This volume of pioneer work is the result of hard labor and experimentation in a difficult and intricate subject. For the purpose of facilitating the study and comprehension of the histology and physiology, the subject has been divided into chapters.

The chapter on technique is intentionally short and simple as possible, in order to interest beginners. The bibliography is wonderfully full and exhaustive and will be found of great service to those who require it for reference. The rapid exhaustion of the first edition indicates a growing interest in the subject of which it treats. The work is profusely and elaborately illustrated, mostly from the author's own drawings, and shows the painstaking effort with which the subject has been studied. One would hardly suppose that so much could be elucidated upon any given subject, especially one so apparently circumscribed as the peritoneum. The author deserves the thanks of the profession for his assiduity.

A PRACTICAL MANUAL OF INSANITY. For the Student and General Practitioner. By Daniel R. Brower, A.M., M.D., LL.D., Professor of Nervous and Mental Diseases in Rush Medical College, in Affiliation with the University of Chicago, and in the Post-Graduate Medical School, Chicago; and Henry M. Bannister, A.M., M.D., formerly Senior Assistant Physician, Illinois Eastern Hospital for the Insane. Handsome octavo of 426 pages, with a large number of full-page inserts. Philadelphia and London, W. B. Saunders & Company, 1902. Cloth, $3.00, net.

No graduate in medicine is thoroughly equipped to practice his profession unless he be acquainted with at least the rudiments of the science of psychiatry. Broad though its domain and difficult of mastery, yet every one may readily acquire knowledge of those principles upon which depends a successful treatment of those cases of mental disorder that form a part of every physician's practice.

This work, intended for the student and general practitioner, is an intelligible, up-to-date exposition of the leading facts of psychiatry, and will be found of invaluable service, especially to the busy practitioner unable to yield the time for a more exhaustive study. The work has been rendered more practical by omiting elaborate case records and pathologic details, as well as discussions of speculative and controversial questions. Certain special features of the work, also broadening its field of usefulness, are the mention of the forms of in-

sanity not usually met with in hospitals, and the including of a comparative table of classification and a chapter on some of the ethical questions relating to insanity as they may arise in the practice of medicine. This work covers the field of its subject completely, concisely and clearly.

The full-page inserts illustrate from photographs, characteristics of the principal diseases, as they appear clinically and will be found useful in diagnosis sometimes.

MORPHINISM AND NARCOMANIA from Opium, Cocain, Ether, Chloral, Chloroform, and other Narcotic Drugs; also the Etiology, Treatment, and Medicolegal Relations. By T. D. Crothers, M.D., Superintendent of Walnut Lodge Hospital, Conn.; Professor of Mental and Nervous Diseases, New York School of Clinical Medicine, etc. Handsome 12mo. of 351 pages. Philadelphia and London, W. B. Saunders & Co., 1902. Cloth, $2.00 net.

The alarming increase, in the last few years, of morphomania and the associated various narcomanias imperatively demands immediate attention by the medical profession. Every year the increasing prominence of this psychosis calls for more exact studies, with a fuller recognition of the conditions and causes of the disease. Medicolegally, questions of responsibility have been asked with increasing frequency, and there has been no literature and no study of the subject to afford an intelligent answer until this present volume was initiated.

The special object of this work has been to group the general facts and outline some of the causes and symptoms common to most cases, and to suggest general methods of treatment and prevention. The object could not have been better accomplished. The work gives a general preliminary survey of this new field of psychopathy, and points out the possibilities from a larger and more accurate knowledge, and so indicates degrees of curability at present unknown. The author shows his absolute familiarity with his subject in the clear, concise, and in every way admirable work which he has given to the profession, whom he has placed under merited obligations.

THE INTERNATIONAL MEDICAL ANNUAL AND YEAR-BOOK OF TREATMENT AND PRACTITIONERS' INDEX, 1902. Twentieth year. pp. 688. Price, $3. New York, E. B. Treat & Co.

This very useful volume has reached its twentieth year of publication, and as is expected with age, has more than doubled its bulk of information. Our readers can make no mistake in ordering this book without previous inspection, as they cannot fail to be satisfied with it. It is solid meat all through.

COMPEND OF GENERAL PATHOLOGY. By Alfred Edward Thayer, M.D., Assistant Instructor in Gross Pathology, Cornell Medical College; Pathologist to the City Hospital, etc., etc. Containing 78 illustrations several of which are printed in colors. Philadelphia, P. Blakiston's Son & Co., 1902. pp. 322, 12mo. Price, 80c.

In preparing this compend the author has kept constantly in view the practical needs of the student, and the subject has been simplified as far as possible, an important item in a book of this nature. There is no question about its usefulness.

MANUAL OF CHILD-BED NURSING with notes on Infant Feeding. By Charles Jewett, A.M., M.D., Sc.D., Professor of Obstetrics and Diseases of Women in the Long Island College Hospital. Fifth Edition revised and enlarged. New York, E. B. Treat & Co., 1902, pp. 84. Price, 80c.

The useful little book has not only found the way into the hands of nurses, but to the mothers as well, judging from the demand for frequent editions.

Dr. S. A. Knopf's prize essay on "Tuberculosis" has reached the third hundred thousand in publication by the Imperial German Central Committee in Berlin. It has been translated into fifteen dialects, showing the great favor with which it has been received, a compliment the author has a right to feel proud of.

THE DIAGNOSIS OF SURGICAL DISEASES. By Dr. E. Albert, late Director and Professor of the First Surgical Clinic at the University of Vienna. Authorized translation from the eighth enlarged and revised edition by Robert T. Frank, A.M., M.D. With fifty-three illustrations. New York: D. Appleton & Co., 1902. Pp. 419, octavo.

This book is intended to present to the reader the problems in diagnosis as they are met with at the bedside. The object is achieved by grouping diseases according to similarity of symptoms and points of general resemblance, thereby attaining as nearly as possible the advantages of clinical teaching, thus systematizing clinical demonstration which is fragmentary and disjointed. The cases are also followed to the operating table or to autopsy in the interest of the diagnosis. Works of this class are rare, and the surgeon cannot fail to appreciate it. The text is classically and concisely written, well illustrated, and clearly printed.

The Palisade Manufacturing Co. have recently issued a "Syllabus of Bacteriology," the second of a series of condensed text manuals, which they distribute free of charge to the medical profession on request. This little volume we believe to be absolutely accurate and up-to-date, as well as comprehensive and complete. It will be found useful to any one interested in the subject.

CORRESPONDENCE.

"GREAT IS THE MOSQUITO."

THE following is quoted from *Modern Medical Science*, but is equally appropriate to-day: "A paragraph is in circulation indicating that the mosquito is not only more potent, but also wiser than the medical profession. In brief, it is that they know better than to poison themselves with the blood of a subject infected with the ineradicable morbific drug sulphur. Neither the mosquito nor flies, it is said, will touch the blood of a person who has sulphur in his system. They smell the fumes on the skin, probably, and with the same antipathy as other people. Nevertheless, it is medical advice to inject the poison which the moquito rejects not only as a stand-off to the wiser insect, but as an unquestionable health giving course of treatment."

Reading the above from the pen of Dr. W. Cowper Conant, one has to ask himself how to account for some of the curious cases that turn up in practice. It is well known among the farmers that sulphur given to cattle and horses, as well as hogs, will make the ticks drop off that have seized on their skins; also lice and other vermin. Here is a case one has some trouble to account for if the mosquito is the sole cause of malaria. Jan. 22, 1901, Mrs. Y., a woman of 20, first child, normal gestation in every way and in perfect health, passing sum-

mer and fall in every way a healthy condition. Delivery and everything normal. On the third day a light chill and fever that passed off with a sweat. It looked a little like malaria, but I laid it to "milk fever." Next day same hour repetition of same chill, fever and sweat. Gave calomel in $^1/_{10}$ gr. doses and acetanilid 5 gr. piperin, $^1/_{10}$ gr. twenty minutes before chill time. No relief of chills. Next day same medicine. No more chills. Now what was the cause of this explosion in a healthy woman in the dead of winter?

2d. Mrs. H., fifth gestation. Had chills off and on from June until the day of delivery, November, 1901. Was several times afraid the severe paroxysms would cause abortion. Was delivered of a boy child and from that day to this has not had a single unwell day and is in splendid health.

Now, "Ye Mosquito Men," and "plasmodium in the blood," "as causes of chills," please explain, in a common-sense way, where and how the chills originated in Mrs. Y., and why they quit in Mrs. H.

One would have supposed that the perfect health during gestation in Mrs. Y. would have cleaned the blood of any disease. And in Mrs. H. the loss of the small amount of blood and lactation would have intensified the previous existing trouble. But they did not.

Here is another: January, 1901, child boy ten days old. Mother had had no malarial troubles. The boy commenced to have "every-day chills" three days in succession. A little calomel and acetanilide, and he had no more chills. What is the matter with that? No mosquitoes, no ditch water, no malarial mother or milk, and yet the chills came on. The proposition of Dr. Conant is to inject sulphur in solution into the blood and thereby kill the plasmodium, or render the body so unpleasant to her (the mosquito's) delicate sense of smell, that she will stay away. For curiosity I believe I will try the effect of lac sulphur in suitable dose, t.i.d., to break up chills without other treatment. Won't some other body do the same and see how it works? It has been an idea with me for a good many years that the malarial poison never really leaves the system; but lurks in the blood for months after every sign of its existence has disappeared. Here is another idea I have noticed, that vaseline and petroleum turn the feces black if taken for a few days, and it occurred to me to give regular teaspoonful doses of these in place of calomel as a bowel antiseptic. It seems to act nicely in these cases if given two days in succession, and then keep off the chill with acetanilid and piperin.

What do you think of it? Yours truly,

BEN. H. BRODNAX.

RETROSPECTIVE THERAPEUTICS.

Hot Water in Diseases of Infants.—In cases where there is non-assimilation of food, accompanied by vomiting, purging, and even convulsions, Dr. H. S. McConnel (*Health*) orders all the hot water the child will take, given through a nursing-bottle. In one most severe case where no kind of nourishment could be retained, and medicines did no good, the hot water treatment was tried. The first bottle of water was immediately vomited, but the second was retained, and a most peaceful sleep followed. The condition of the bowels gradually improved, and vomiting gave very little trouble. At the end of another twenty-four hours a teaspoonful each of cream, lime-water, and water was given every hour, then egg-water, and finally, condensed milk. This was an extreme case, everyone expecting the child to die, yet it made a good recovery. Hot water is a stimulant, an antiseptic, a sedative, and a food, and if you will flush the stomach of the vomiting and purging infant with hot water for twenty-four hours, withholding all foods, and then, in small and easily digestible quantities, at short intervals, give nourishment, you will very often rescue it from the grave. Commence with pure hot water, then add salt and, when necessary, sugar. One will be surprised to see how greedily the children drink it, preferring it to their nurse, and it will produce a quiet, peaceful sleep, and the extremities that were previously cold and clammy will become warm and natural.

Treatment of Typhoid Fever by Administration of Olive Oil.—O. F. Paget, in the *Lancet*, states that splendid results are derived in the treatment of typhoid by slowly administering, every 12 to 15 hours, an enema of about one pint of olive oil; this should be retained in the bowels for several hours, if possible. If, after 12 hours it is not expelled, it may be discharged by giving an ordinary soap and water enema, three hours after which another enema of olive oil may be given. The daily administration is discontinued after one week, and then may be given only when the temperature is elevated or the bowels constipated. If diarrhea is present olive oil should always be given and the use of bismuth is not necessary. He claims that the death-rate under this treatment is *nil*. Heart failure, sequelæ, tympanites or perforation of the bowels is not present, nor are cold baths necessary.

Sulphur in the Treatment of Dysentery.—Dr. G. B. Richmond, late of the Imperial Yeomanry Hospital, Pretoria, relates in the *Lancet*, November 23, 1901, his experience in the use of sulphur in the treatment of dysentery, after he had tried all the recognized remedies for the disease with no success. The dose administered was 20 grains of sublimed sulphur combined with 5 gr. of Dover's powder, four to be given hourly. In every case thus treated a cure was effected, without any apparent tendency to relapses or chronic conditions of alternating diarrhea and constipation; and furthermore, there was no vomiting as with ipecacuanha, and therefore no necessity to starve patients.

In taking into consideration the great prevalence of dysentery in the Philippines, says the *Medical Record*, experiments with sulphur in the treatment of the disease would, in the first place, show whether its administration bore as good results there as in South Africa, thereby tending to prove the identity of the malady as met with in the two localities; and secondly, if the treatment were found as effectual as Dr. Richmond asserts, it would be a valuable means of checking the inroads of dysentery among the American troops in the islands of the far east.

Palliative Treatment of Uterine Cancer.—In cases of cancer which are beyond surgical interference, the principal symptom requiring treatment is pain. Our sovereign remedy, says the *Massachusetts Medical Journal*, is, of course, opium, and the patients, if they live long enough are bound to become opium-eaters.

Dr. G. R. Leighton reports a case of carcinoma uteri, illustrating the advantages of opium treatment. After giving the drug in the form of morphine suppositories and the liquor morphini hydrochloridi (B. P.), the author found the tincture of opium to be more effective. Commencing with smaller doses, the amount consumed daily soon represented 8 grn. of opium. The results were very favorable; pain disappeared, sleep became refreshing, and the patient gained in strength. However, the quantities of opium had to be gradually increased, and soon the woman was taking 3 oz. of the

tincture daily. Still later the daily amount reached 6 oz. and it is hard to tell what quantities would have been finally consumed had not the patient died on arriving at 12 oz. of tincture of opium or 400 grn. of opium daily. The drug was well borne and the patient never knew what she was taking. The author advises converting similar patients into unconscious opium-eaters.

Vaccination as a Therapeutic Measure in Whooping Cough.—D. Lofruscio (*Semana Medica*) says that children were vaccinated for the first time in 121 cases and re-vaccinated in 31 out of the 152 cases of whooping cough, complicated with bronchitis or pneumonia in many instances, which he had occasion to treat last year. He is convinced that vaccination solves the therapeutic problem of whooping cough. Five typical cases are described in detail; in most of them pneumonia and the convulsions ceased as if by magic after the vaccination and although the cough persisted for a few weeks in some cases, it was merely as an ordinary catarrhal cough.

Diagnois of Smallpox.—J. Maccombie, M. D., (*Lancet*, December 28, 1901) lays down the following rules: (1) It should never be forgotten that the initial symptoms of smallpox are most constant both in vaccinated and unvaccinated subjects. (2) When called to a case the practitioner should never take for granted that the eruption on the trunk is like the eruption on the face and extremities, but in every case he should examine the whole eruption. Disregard of this precaution leads to many mistakes. (3) It should not be assumed that because a case of smallpox has occurred in a house, therefore a vesicular eruption appearing on another inmate of the same house about the same time is smallpox. I have known cases of chickenpox and smallpox occurring simultaneously in the same house, and smallpox and enteric fever cases in the same family at the same time. (4) It should be remembered that in a very large number of vaccinated subjects smallpox is so mild that as soon as the eruption—consisting sometimes of not more than half a dozen spots—has appeared the patient feels well. (5) Care should be taken to avoid ascribing the spots on the face in a mild case to digestive disturbances.

Diphtheria Antitoxin Immunity.—Henry D. Jump, in the *Philadelphia Medical Journal*, cites five cases in which he produced immunity, and from which he draws the following conclusions:

1. That as diphtheria antitoxin is practically harmless, all exposed persons should receive an immunizing dose in proportion to age.
2. That two hundred and fifty units should be given to children under two years and five hundred to all others.
3. That the immunity will last for at least three weeks, provided a reliable antitoxin is used.
4. That all exposed persons should be removed from infected surroundings, either by thorough disinfection of their own quarters or by removal to other places. If this is impossible, the immunizing doses should be repeated every third week.

Alcohol in Pneumonia.—At the recent meeting of the New York State Medical Society, Dr. R. H. M. Dawbarn said that Dr. E. G. Janeway told of his personal experience in double pneumonia. He was under the care of the elder Loomis, who insisted at the critical period of the illness on administering two quarts of brandy each day for two days. Dr. Janeway ascribes to this heroic stimulation his recovery from the extremely severe symptoms under which he was already laboring when this free administration of the brandy was begun.

Antiphlogistic.—The application of a generous layer of antiphlogistine to a "bad arm" after vaccination, completely covering the inflamed area, will speedily allay the inflammation without in any way interfering with the success of the vaccination.

RETROSPECTIVE DIETETICS.

Goat's Milk.—It would seem (*Thérap. Gaz.*) that goat's milk, which has for so long a time been rejected on account of its odor and its composition, is about to be used much more extensively. Dr. Marfan has shown that in fresh milk there are certain zymoses which are destroyed by heat. The goat's milk does not contain any more casein than woman's milk and according to Crépin's analysis the amount of casein and butter is about the same as in human milk. Dr. Boissard, obstetrician of the Paris hospitals, published last year a report on the results given by the use of goat's milk, and the latter were favorable. There is a special establishment in Paris where goats from the French and the Swiss Alps are kept. The greatest cleanliness is observed, the dugs being washed at milking time with boiled water; the milkmen are obliged to wash their hands with soap; the bottles and milk cans are sterilized by being boiled in a solution of carbonate of sodium. It is a well-known fact that the goat does not readily contract tuberculosis, and this of course is a guarantee of some importance.

Food Value of Olives.—Ripe olives, says the *Dietetic and Hygienic Gazette*, are a very nutritive and perfectly digestible form of food. The green olives of the market are quite the reverse of this. They are but slightly nutritive and are very difficult of digestion. Most people have never seen, much less eaten, a ripe olive. They buy those offered by the caterers—hard, green pickles, as unlike ripe, digestible and toothsome olives as green, puckery crabapples are unlike ripe, tender greenings. Ripe olives are very dark, almost black in color. They are beginning to make their appearance in the markets, and to be appreciated.

The green ones—Spanish and Italian chiefly, as found in the ornamented, punted and delusive little jars—are merely tough pickles. The ripe ones, although kept in a strong brine as a preservative, are an edible fruit. One can take them as freely as grapes or plums. Most of these ripe ones come from California. It is to be hoped the Californians will so improve their methods of treating this valuable and delicious fruit that it will become an article of diet in every household.

The Horse-Chestnut as a Source of Food.—According to the *Dietetic and Hygienic Gazette*, chemists have long known that the nut of the common horse-chestnut, Æsculus Hippocastanum, is rich in starch and albumen, and therefore highly nutritious, but until recently no effort has been made to utilize it as a food product. Scientific interest has culminated in the perfection of a process by which the bitter resin and oil are extracted and the remaining substance made palatable and appetizing. The process consists in moderate roasting to facilitate the removal of the outer shell. The meat is then pulverized and placed in a closed perforator containing ethyl alcohol. The mixture is maintained at a moderate temperature for a week, during which time the resin has been dissolved. The resulting tincture is then drawn off, the alcohol evaporated, recovered by condensation and returned to the powder and the maceration continued for another week, in order to remove all trace of the resinoid. This process is repeated by an

automatic arrangement of the apparatus until the chestnut meat is wholly free from the bitter taste. The alcohol is finally all driven off by distillation and the dried meat becomes a pleasant and very nutritious food.

The tree flourishes in the temperate climate in almost any soil, is a vigorous grower and the crop of nuts annually yielded ought to make it a profitable investment, provided the new process proves all that is claimed for it, and not too expensive for commercial purposes.

Feeding in Typhoid.—The dietary of typhoid patients is at present in a state of revolution, and undoubtedly the new movement is in the right direction, says P. J. Byrne in the *New York Lancet*, November, 1901. Up to quite recently the usual custom was to keep the sufferer on a milk diet, with beef tea occasionally when the condition of the bowels permitted, until the temperature became normal. Patients thus treated may convalesce favorably, particularly where the disease runs a rapid course, but when prolonged the result is far from satisfactory.

"I have frequently noticed—and particularly among the working classes, where the craving for food on the part of the patients has been surreptitiously satisfied by anxious friends—that in many instances beneficial instead of injurious results followed; increase of weight and tendency to rest being distinctly marked, and the convalescent period being considerably shortened; the patients often being able to return to their work in an amazingly short time. It is generally admitted that when the tongue is dry, the temperature high, milk and beef tea, better still predigested, are indicated. But when the tongue is moist, and the patient complains of feeling hungry, malted preparations, followed, as the digestion improves, by light farinaceous food, such as arrowroot, corn flour, rice puddings, with a little sugar added easily digested; fish, fowl, and occasionally part or whole of a lightly boiled egg, may be given with advantage; the digestive powers of each individual being of course carefully noted. In cases where the patient is much wasted, and diarrhea not troublesome, half to a tablespoonful of fresh cream, diluted with water, frequently repeated, is highly beneficial. The absence of vegetables from the diet in protracted cases has, to my mind, accounted directly for fatal results in at least four instances which came under my observation. * * * As vegetables are necessary to maintain health under ordinary circumstances, it is obvious that in some form they must be supplied during protracted disease; otherwise, if scurvy does not actually appear, I think it may at least be inferred that the recuperative power of the blood will be deficient, owing to the lack of vegetable salts. To combat this condition, especially in prolonged cases, half to a teaspoonful of orange juice in a small quantity of sweetened water should be given occasionally, and will always be gratefully received by the patient. Vegetables, such as onions, carrots, etc., may be stewed with meat in the preparation of soups; by this means, some of the anti-scorbutic constituents are extracted, besides giving the patient the benefit of change and variety in taste.

"I have adopted this system of dietary during the past four years and have every reason to be satisfied with the results."

Brummitt, in the *Australasian Medical Gazette*, dates his change from the orthodox mode of treating typhoid with liquid food alone, from a patient who ate up her poultice which had been ordered for an abscess, and since then he has used soft instead of liquid foods quite extensively. He reports a number of cases. When the digestive power of the stomach is good, he commences with light farinaceous foods and bread and milk, and goes on to minced meat, mashed potato with milk or gravy, custard, light boiled eggs with breadcrumbs or thin bread and butter; boiled white fish or fowl, brain, rice in various forms, etc., and some vegetables are often desirable, but he would remove the solid portion. Watchfulness as to the evacuations, however, must be continued, and if non-digested food is passed a change should be made at once. He does not advocate the indiscriminate use of strong food in enterica; adherence to a milk diet would be better than that; but a careful study of 98 cases leads him to conclude that the well-being of the patient generally is favored by the use of a more liberal diet.

Artificial Milk.—The formula which is given in this article (*Med. Rec.*) represents a milk that contains all the component parts of the natural animal secretion. The product is cheap, and easily and readily prepared. The ingredients are easily obtained. They should be fresh and palatable and sterile. The formula is: Extract of malt (syrupy), one tablespoonful; olive oil, one tablespoonful; roasted flour, two teaspoonfuls; one broken raw egg. Beat up in a bowl or dish with a spoon or egg-beater for three or four minutes. Add by degrees, while stirring, a tumbler or gobletful of pure cold drinking water. Season with salt. To be taken one or two hours after meals. In hot weather add crushed ice. This general formula is modified in various ways according to the case. The flavor is rich and the aftertaste pleasant. This milk is very useful in temporary exhaustion, mental or physical. It is an excellent galactagogue. For the use of travellers, explorers, and sportsmen, the milk is also theoretically well adapted.

THE NEWER TREATMENT.

DISEASES DUE TO OCCUPATION.

THERE have long been known to the profession various ailments which are caused by the occupation or business of the patient. In the first place there are many diseases which occur in businesses which are actually unhealthy, such as painters' colic, due to the absorption of lead into the system, among workers in paint works or among painters handling white lead. Again, miners working in coal dust, men beating carpets, grinders of sharp instruments, etc., breathing of necessity air contaminated with fine particles of foreign material, are apt to have throat and lung diseases of various kinds. Again, strain, both physical and mental, produces a great deal of disease. Porters, furniture movers, and baggage men, are exposed to heart lesions and aneurisms, owing to the severe and sudden strain of their work. I remember as a student, a brilliant clinical lecture by Pepper, on heart disease among railway engineers, which he was able to illustrate with two patients, both of them engineers who had lost their nerve. Constant anxiety in these cases and not the physical work had brought on the disease.

The sports have given their share of patients of this class. The overworked arm of the pitcher in baseball has received the very descriptive title of "glass arm," while the same condition scattered through the entire body of the baseball player is called for reasons unknown to the writer, "Charley-horse." We now hear of the "golf-elbow and wrist," the "tennis arm," while, of course, the injuries in football usually affect the joints.

There is another class of diseases due to occupation known as occupation or professional neuroses. As far back as 1830, Sir Charles Bell described the condition under the name of "professional spasm." The popular title of writers' cramp or scriveners' palsy is no longer

applicable to this disorder, for it is found now in so many different occupations.

In times past there have been attempts made to divide the occupation neuroses into four forms, the spastic, the neuralgic, the tremulous, and the paralytic. But, if we accept the recent investigation of the mechanism of tremor we must conclude that tremor is only a higher grade of spasm, and both, in spite of the pathologic increase of muscular tonus in spasm, are alike paralytic phenomena. This reduces the neuroses to two distinct forms of the affection, the paralytic and the neuralgic. These two forms are frequently combined; the painful sensations in occupation neurosis differ from neuralgia in being excited at first only by special action of the overtaxed muscles. As Gowers points out, it must not be forgotten that the spasm in the muscles may be merely a local indication of a general nerve-exhaustion. The act of writing, as is well known, is most highly specialized, and requires many years of patient effort for its proper adjustment. Buck, in a recent paper, called attention to the fact that those faculties that are developed latest, soonest decay.

It is only natural that the most highly specialized of all the faculties, the co-ordinate movement, of the finer muscles of the hand, are the first to lose their co-ordination as the result of general irritation. The following are the few cases of this class. The first case was that of a court stenographer who was busily engaged for some years in taking testimony in court. This required very rapid work over long periods of time. At length at the age of forty-five years he found a great sense of weakness and pain in the index finger and thumb of the right hand whenever he attempted to take dictation. The condition was slowly coming on, and the man, after active treatment for a long period, was able to resume his work, although his hand never became well, and he complains of it bitterly yet.

The next case is that of a motorman, whose hours were long and whose work called for the steady repetition of certain manipulations, such as the use constantly of a brake and the constant stamping of his foot on a bar of iron to ring his gong. He developed a neurosis which was quite stubborn to treat until he was able to secure other work which did not call for the steady use of these certain nerves and muscles.

It would seem as if this condition were essentially a fatigue neurosis of central origin, and that the peripheral manifestation which was present, such as pain or swelling from neuritis or myositis, is really secondary.

There is no doubt that the great majority of these cases occur at a time of life when there is a combination of harder work than any other period of life, while the resistance has been weakened by increase of years. There is no doubt that there can often be found in these patients an inherited tendency to nervous diseases. Cases have been reported of many patients occurring in the same family, or in families where there were epileptics or imbeciles. Therefore it is not improbable that a lack of development of the nerve centres is a potent predisposing factor to an occupation neurosis.

The symptoms of an occupation neurosis can be divided into motor and sensory; they come on gradually. With the development of spasm there is an increasing tendency to grasp the pen more tightly. This but increases the difficultty in writing, and the patient finds that he writes slowly and with effort as if the hand were weighted. The hand soon tires, and the aching pain referred to the part involved becomes unbearable. The power in the hand is gradually diminished, but no true wasting occurs.

The electric irritability of the nerve and muscle is usually normal, but not infrequently a light quantitative increase is found. The sensory symptoms consist of a sense of fatigue, which later may develop into active pain, often lancinating in character. The pain occurs at first only during the act which has been in excess, and is referred to the part involved, but later may pass to distant parts, as the axilla in writers' cramp and the occiput in readers' cramp.

As there have been found no anatomical changes in the occupation neuroses we are left to theory as to the pathology. There are four theories in regard to these conditions. The first, or "local theory," is that the disease is purely local and that the weakness in some muscles allows the overaction of the balancing or antagonizing muscles, which increase the spasm. Moyer suggests the second theory in a recent paper; he believes that the overworked muscles or at least the peripheral endings of the nerves in the ultimate muscular fibres are involved. In other words, it is a simple myositis. He offers some strong arguments in favor of this theory, as follows: (1) electrical examination is normal; (2) muscle involvement is identical with the overtaxed muscle; (3) disinclination to work is due to pain; (4) exacerbation of the condition occurs when forced work is attempted; (5) there is found no association of rheumatic or other pains; (6) sensation in the involved part is perfect.

Romberg has suggested a third theory, which is that the spasm is a reflex act due to the stimulation of the sensory nerves in the act of writing.

The most commonly accepted theory is that put forward by Gower, who regarded the disease as one which is primarily and necessarily central. Gower has written as follows in regard to this condition: "There is at present no direct evidence as to the part of the nervous system in which the primary derangement occurs. That the action of the motor and sensory nerve cells of the spinal cord must be disordered is certain, since it is through them that spasm is produced and pain perceived. But we do not know whether their derangement is primary or whether it is simply the effect of a primary disorder in those cerebral diseases in which the movements are arranged. The latter is the more probable, and the central region of the cortex is that to which we would naturally turn as the seat of the primary derangement, since it is from this part of the brain that the spinal cells are directly excited."

To those who are interested in this subject to go into further details we would advise them to study the researches of Hodge of the changes in nerve-cell activity. The first paper was published in the *American Journal of Psychology*, and later an important paper entitled "A Microscopical Study of Changes Due to Functional Activity in Nerve Cells," published in the *Journal of Morphology* for 1892 and 1894. Hodge comes to the conclusion that there are definite changes in the nerve cells in the occupation neuroses, and that our prognosis must be guarded if the disease has lasted for some time, especially if perfect rest cannot be obtained and no other cause than the excessive use of certain muscles can be found.

When it comes to the question of treatment, probably the most useful form is the injection of the sulphate of strychnia deep into the muscle, repeated three times a week. This treatment is especially indicated in aggravated cases; it not only favorably influences the muscles but alleviates the pain. Complete rest or a change of occupation is also very useful in the treatment, and often will produce a cure without the use of drugs or

further treatment. If the occupation must be continued it is well to devise methods of carrying it on so that other muscles may be used. In case of writers' cramp, it is well to study the manner of the patient holding his instrument; often he can hold it in a different way, and, in some cases, patients have learned to use the other arm.

It would be well if the teachers in our schools would follow the plan of teaching their scholars to write with both hands. They do this now in the case of left-handed children, and there is no reason why they should not do it with right-handed children.

Galvanic electricity, massage, and finger exercises are beneficial in their place. When tonics are indicated, either for the nerves or for the blood, they should be ordered in liberal quantities.

ONE METHOD OF TREATMENT OF HYSTERIA IN CHILDREN.

The recent report of hysteria in children recalls to mind a rather interesting case, or rather cases which occurred in the writer's practice some years ago, which while not exactly what might be called "hysteria in children," shed an interesting light on one side of the question which must be considered by the level-headed physician.

I was called in great distress by a hard-working woman during the summer to see her three girls, whom she stated she thought were dying of some incurable, and to her wholly mysterious disease. I found the children to be healthy in appearance and vigorous in their movements; their ages were ten, twelve, and fourteen respectively. It seems that they were having convulsions at frequent intervals. The first thing that excited my suspicion of the genuineness of these attacks was the fact that the children had them in order, first one and then the other in rotation. From the description by the excited mother, it was impossible to at first learn anything excepting that the fits were frightful to behold and the children impossible to control.

On examination I found that the children never hurt themselves in any way in these attacks; they did not bite their tongues nor froth at the mouth in any way. While they would fall down they never struck anything that injured them. After the attacks they were bright and cheerful, showing no loss of mental power. The mother stated they had never had any such attacks before this mysterious visitation, and their family history in all directions was empty. In fact, on boiling down the testimony of those who had seen these children in these attacks it was found that there was no history of any definite convulsions, but the children simply twisted and bent around. After careful consideration of this case I ordered in the presence of the children that they should be severely chastised on the first attack, and that if the mother was not able to do it she should send for me to administer the treatment. I assured the mother and children that this was the only treatment mentioned in the medical books for such a distressing condition. As a result not one of the children ever had another attack.

Later, I learned from the oldest little girl that they had simulated the attacks in order to get away to the country on the Children's Country Week, and subsequently, their hearts were made glad by having their wishes granted, so that they were successful in their schemes after all.

CAUSE AND TREATMENT OF PERNICIOUS ANEMIA.

It is well to remember in studying cases of pernicious anæmia that back of the condition which is observed there may be changes in the spinal cord which must be considered in the prognosis and treatment of this condition. Undoubtedly, in these cases the changes in the spinal cord do not depend upon anæmia, but they both spring from a common source, which is some poison contained within the blood. At the same time anæmia undoubtedly makes the nervous tissues more susceptible to any poisonous agency just as it affects other tissues in the body, but there have been cases reported in which symptoms of spinal cord affection have been observed from eight months to two years before there was any anæmia discoverable. In these cases, generally the degeneration was more prominent in the regions of the neck and upper portion of the thorax, and diminished as the two extremities of the cord, the cephalic and caudal, were approached. Nonne has reported that the spinal changes in pernicious anæmia are disseminated myelitic foci found in connection with the blood vessels. He explains this by the theory that the poison is carried into the nervous tissue by the blood. He reports that out of eight cases of pernicious anæmia which he examined he found these myelitic changes in six.

Whether in the progress of medicine pernicious anæmia will be regarded as an individual disease or like dropsy, simply considered as a condition which may exist in a number of diseases, will never be definitely decided until we know more about the processes involved. In this connection Engle, in an interesting paper, reports that he believes that in this condition there is a retroversion of the blood-development to the embryonal state. He has examined five cases in which he reports that he has found what he calls metrocytes, which are followed by the development of normoblasts. He has stained these metrocytes, showing that they have a large amount of protoplasm and a small nucleus. He believes that the fact that the medulla of bone is red in pernicious anæmia further proof of his theory, for in the new-born the bone-marrow is red. He has been criticized, however, by other pathologists who think that the need of active blood formation is present both in fœtal life and in pernicious anæmia, and that this is the cause of the similar appearance of the marrow. In other words, nature endeavors to supply new blood corpuscles in both conditions, and this, therefore, cannot really be called a true reversion to an embryonal condition.

The latest and possibly the most complete division of the factors in etiology of pernicious anæmia is the following: (1) Gastro-intestinal disease of long standing; (2) pregnancy; (3) chronic hemorrhages, especially those of small size; (4) constitutional syphilis, especially when associated with changes in the bone-marrow; (5) bad hygiene of any sort; (6) chronic poisoning; (7) parasitism.

The following is the report of an interesting case of the features generally recognized in this condition. The following case is that of a woman; contrasting her condition with that of another patient who is a sufferer from chlorosis, it can be seen that the pallor is considerably greater. On examination of her skin it will be found that it is of a decided yellowish hue, and there are minute hemorrhages found in the extremities; retinal hemorrhages have been detected by the use of the ophthalmoscope. Examination of her blood reveals the fact that the red corpuscles are diminished to below one million per cubic millimetre, while her hemoglobin is about 35 per cent. Microscopically, the red corpuscles are

seen to be irregular in outline, while others are normal in shape but small, while here and there an unusually large almost colorless corpuscle is seen. There is also an increase in white corpuscles. With these laboratory symptoms there is also a similar disturbance clinically. The digestion is considerably upset, and the patient has frequent attacks of diarrhœa. Her heart is weak in action; her arteries are wretchedly filled, and the whole circulatory system is far below par; her menstrual periods have disappeared. She suffers from neuralgia, tinnitus aurium, insomnia; she is breathless on exertion, and she is easily fatigued by muscular or mental exertion.

If she was suffering from the anæmia due to hemorrhage or from that due to chlorosis, we will be far more hopeful as to her future prospects; but we can regard her position as better than it was formerly considered in the profession, for there have been cases as bad or worse than she who have recovered. The treatment in the case of this woman will consist of the regulation of diet, rest in bed, and the use of arsenic in good sized doses. The use of iron in these cases, especially in the earlier stages of the disease, is now regarded as practically contra-indicated. In cases where there is intestinal putrefaction, calomel, salol, and similar remedies can be tried. Beta-naphthol has been recommended in many of these cases, but its use has not been especially encouraging, for it is apt to bring on diarrhœa and also lock up the secretions of the kidneys. And yet there have been cases reported in which the use of this drug have been regarded as the direct cause of the recovery.

Transfusion of blood is recommended in the textbooks in this disease, and can be tried as a last resort, but the majority of the profession who have used this therapeutic measure have not been enthusiastic over it. It would seem as if the use, intravenously, of some improved form of saline injection would do much better in these cases.

The advocates of the use of iron in this condition have been able to present a strong series of cases in which the use of this drug seems to have been of the utmost service. In a case of my own in which it has been treated with arsenic for some time, the man grew worse and worse until his case seemed absolutely hopeless. The patient could get but little sleep and became delirious every night. Finally he was placed upon the tincture of the perchloride of iron well diluted, every two hours. He bore this large dose well and began to show some improvement in the course of a few days, and the medicine was given, although in less quantity and less frequently, for several months. After four months he returned home with all his unfavorable symptoms disappeared. Since this time he has had one or two slight relapses, but on being placed on the same treatment which had been so successful before, he again got well. Therefore, it is too sweeping to state that iron fails in all cases of pernicious anemia. Of course, on the other hand, there are cases in which arsenic does good and iron does not, but we will also find cases in which no course of treatment gives relief, or, if it does, it is only slight and temporary.

In fact, if we are sticklers for the use of pure English, it is a question whether the term "pernicious" can be applied to any case of anemia that eventually gets well; for, if it gets well, it belies the title of the disease. Possibly, however, when we know more about the etiology of the condition which I have tried to avoid referring to as a disease, we will drop the title "pernicious" entirely.

PRACTICAL METHODS IN TEACHING MEDICINE.

The medical student has so much food in a medical line predigested for him that he has often little opportunity to think for himself. Therefore, the tendency of the times in the lengthening of courses at the various medical schools has been to introduce more work which will make him think for himself. Not only should he be given cases of obstetrics to attend and medical cases to diagnose and care for, but he should also be given as far as possible surgical work to look after. This system has been called by some teachers the "case-method of teaching," and used as a supplement to the didactic lecturer, attendance at the bedside in the hospital wards under the eye of the professors and the clinic, it undoubtedly does much, not only to stimulate the student to think for himself in diagnosing cases unaided, but it also arouses his interest, and encourages him to look for cases of his own, which a moderately diligent student can always find.

The method by which this is carried out at one of our leading institutions is as follows: Each student in the class receives the clinical data of some actual case, including the family history, personal history, the account of his present illness, the results of physical examination, reports of the examination of the blood, serum, and urine, and such other information as bears upon the subject. From this data he writes a report of the case, outlining the diagnosis, the prognosis, and what he considers to be the proper treatment. These cases are gone over with the class, criticized, and corrected. In this way each case is made to benefit the whole class. It is remarkable in the histories presented by the students what a high-grade class of reports are presented.

TUBERCULOSIS ANTITOXIN.

Dr. Herman C. H. Herold, president of the Newark, N. J., Board of Health, through whose efforts a bacteriological laboratory was established by the board and antitoxin manufactured, has been experimenting with a new method of treating tuberculosis. He has obtained a serum by inoculating a horse, and proceeds upon the theory that an antitoxin is needed not only to kill tuberculosis germs, but also associated bacteria. This remedy he believes he has found in his antitoxin. The Board of Health has given a ward in the City Hospital, in which there are five beds. The first patients to be operated on were two men who were in the advanced stages of consumption, and the results were encouraging. The progress of the disease was arrested and the patients gained strength and flesh. The method employed is, Dr. Herold explains, simply an elaboration of methods used in diphtheria. He had observed that only a small proportion of persons infected with tuberculosis really die from its direct effects. The chronic and more numerous cases ran a course extending over months and even years, and in such cases the patients tend to recover, and sometimes do, but on account of lowered resisting power they easily become infected with various other kinds of germs, such as the pyogenic cocci and varieties of bacilli which lodge in the devitalized tissues and give rise to destructive changes, causing cavities to form, and destroying adjacent tissues faster than natural repair can replace. The toxic products of decomposition are to some extent absorbed into the sytem almost constantly, lowering vitality and producing what is really a septic condition, against which the remedy is intended to operate. It will be interesting to watch the progress of these tests.

MISCELLANY.

—Medical students in New York may now be admitted to preliminary examination at the age of nineteen.

—It is reported that never before in the history of the United States has there been such a scarcity of veterinary surgeons.

—A change of air is less valuable than a change of scene. The air is changed every time the direction of the wind changes.

—If you want to gain a reputation for working miracles, wrap a swollen rheumatic joint in cloths wrung out of ice water and the pain will almost instantly cease.

—France contains more people over sixty years of age than are found in any other European country. The next greatest percentage of old people is found in Ireland.

—Acording to recent reports, there are living at present in the United States five sets of triplets who have attained the age of 45 or over. The oldest set, aged 55, live at St. Clair, Mich.

—According to the *Philadelphia Medical Journal*, it is very rare that a man survives his 100th jag. The maximum capacity of a man for alcohol is about 2,000 gallons of whiskey in fifteen years.

—Emperor William has commissioned Professor Ehrbach, the well-known bacteriologist and physiological chemist, of Frankfort-on-Main, to devote himself henceforth exclusively to the study of cancer.

—In Michigan they assess a dog one dollar for being a dog. In Tennessee they assess a man fifty cents for being a doctor. It costs half a dollar more to be a dog in Michigan than a doctor in Tennessee. Don't be a dog.

—Miss Mary Hinman, of Grand Rapids, Mich., who sued Dr. Herrick for $5,000 because he allowed medical students to witness an operation performed upon her, was recently awarded $75 damages by a Circuit Court jury.

—In true normal bronchitis the appetite remains. In pneumonia it is lost. This is a diagnostic sign of value. The better the appetite, as a rule, the shorter the attack. This fact doubtless gave rise to the saying, "feed a cold but starve a fever."

—The Department of Public Instruction in the City of Mexico has suppressed the study of Latin in the great preparatory school where young men are prepared for professional careers and replaced it with English. In the great school under clerical care English has practically displaced Latin.

—Dr. S. A. Knopf, the well-known authority on tuberculosis, in addressing the New York Academy of Medicine lately, stated that tuberculosis was not contagious. A man with well-defined tuberculosis could do his work daily if proper precautions were taken and the sputum was removed and destroyed.

—Professor Loeb has been telling the world how a sea-urchin's eggs can be preserved from decay by adding to their environment some cyanide of potash. This, the *Medical Age* says, has been stretched out of all proportion into a discovery of the immortality of matter and the permanence of life. Foolishness can go no further.

—According to Dr. Gardner T. Schwartz of Providence (*Bulletin American Academy of Medicine*, April, 1901, p. 289), all graduates of the Ann Arbor School are excluded from examination, let alone registration, by the Rhode Island State Board. The reason assigned is the lack of clinical advantages presented by this institution.

—Under favorable conditions of peace, says an English weekly, the mortality among soldiers is practically the least known, with a death-rate of only 5 in every 1,000. Compared with a soldier's life, the placid days even of a clergyman are full of danger, for his death-rate is 11 in 1,000, or more than twice as great as that of his militant brother.

—A cheap and rapid method for concentrating the enormous quantites of blood collected in abattoirs is described by its inventor in the *Technische Rundschau*, (*Sci. Am.*) The blood is injected in a finely pulverized state into an oven-shaped chamber open at the top, and brought into contact with a current of hot air ascending from below. All the water is evaporated in this manner, and the blood powder is carried to the receiving chamber. According to the inventor, the powder thus obtained is tasteless and contains 74.8 per cent. of digestible albumin.

—It is extremely rare to find a race keeping to itself and not intermarrying with its neighbors, yet this is the case in at least one part of England, according to a statement in *Health*. At Brandon, on the borders of Suffolk and Norfolk, there is a race, living by itself, marrying only members of its own kind, whose characteristics are as different from those of the surrounding peoples as is night from day. Their origin is lost in antiquity, and they are believed by some to be the last remnant of prehistoric man. They are probably the only people that still work in flint, and they have carried on this trade from time immemorial.

—The ability of the blind to perform massage successfully has been clearly demonstrated in Japan, where they are employed exclusively for this work. Their wonderful delicacy of touch has enabled them to acquire a high degree of proficiency, and therefore when massage was introduced into Russia, their employment also became general in that country. At the institute for the blind in St. Petersburg, a considerable number of the students are carefully instructed in the art of massage and also in the main points of physiology and anatomy. Their introduction into other European countries has thus far not been attended with success, although Germany is now making arrangements tending to their permanent employment.

—M. W. Herman (*Brit. Med. Jour.*, June 1, 1901) states that if silk catheters are boiled in plain water they soon become rough, cracked, and totally unfit for use. If, however, they are boiled in a saturated solution of ammonium sulphate they remain unchanged. Boiling from three to five minutes in the solution is sufficient to sterilize extremely dirty catheters, but they may be boiled for five hours and retain their polish. The only change is that they become more elastic and are therefore improved. After being removed from the solution they may be lubricated with vaselin and used immediately, without being dried, since the solution of ammonium sulphate does not irritate the mucous membrane. Nelaton and elastic catheters may also be sterilized by boiling in the same solution.

ORIGINAL ARTICLES.

COMPATIBLE MEDICATION, OR THE PHYSICAL FORCES IN SCIENTIFIC FORMULATION.

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PART III.

DEGENERATIVE changes arise most frequently from the differentiation of protoplasm, which is the cause of structural change in organs or parts of the body. If the flexibility of the colloids of protoplasm be reduced, a corresponding increase of the consistency of a part must of necessity follow. This is what occurs in tissues that are not necessarily malignant; a return to the normal consistency could be brought about only by means promoting a return of the colloids of protoplasm to their flexibility or viscosity.

In differentiation of tissue there is either a preponderation of the crystalloids, or of the colloids. In those diseases where stroma abounds we have crystalloid preponderance, or hardening of tissue; where colloids preponderate the opposite takes place—a normal balance, that where neither preponderate but are in perfect harmony, and here we have physiological integrity. Scirrhus would indicate a preponderance of stroma, or crystalloid preponderance, and colloid degeneration, sometimes found in encephaloid growths, would indicate colloid preponderance. There is no new tissue in a growth, only differently arranged normal tissue.

The discovery of the incentive to this loss of balance would furnish us with a knowledge of the cause of carcinoma. The cause of malignancy in the colloid is where the incentive arises for differentiation, because of the colloid being the protoplasmic part of the cells of the body.

Colloid aberration is produced sometimes by mental and other times by mechanical shocks—mental by emotional, mechanical through accidents.

What changes can or could occur to a cell by substitution after vacuolation, or substitution without vacuolation? Degeneration of its contents, so that parts of organs may so differentiate that their functionality would be involved. The cells of an organ cannot differentiate at one and the same time; differentiation must be gradational. The different types of disease should be understood to be the particular stages of cellular differentiation. All types of malignant diseases are peculiar cellular differentiations, and must be caused by some incumbrance to normal organization.

The above refers to where the cells are at fault composing the tissues themselves, as distinct from the matter of cell or tissue nutrition. The matter of nutrition may also differentiate by alteration or differentiation of pabulum. Departure from the normal must manifest itself in the quality of tissue produced by it. The body in its aggregate has its prototype in a single gland.

The metabolic function being at fault in transforming the matter of cell supply, the potentialities will cause differentiation of tissue. This is the probable cause of degenerative changes as evidenced by growths or enlargements. Malignant growths probably come from an irritation of cell protoplasm or a modification in cellular nutrition.

Functional causes arise from emotional disturbances. The gravest conditions are from other sources. If the potentialities are at fault in inducing degenerations or regressive changes, a correction must be brought about in those chemical compounds that have departed from their normal integrity. The same material that nature selected for man's formation should be used in reinstating the normal condition whenever it has departed from physiological integrity. Physiological integrity is chemical integrity. Excessive indulgences in any form not only tax the reserve energies, but affect the metabolic activity of cells as well, and alter the potentialities presiding over chemical and physical transformation. Becoming established by habit these indulgences permit chemical alteration which ends in disease. The infectious or contagious diseases arise from other causes but they also influence the chemical changes going on in the body.

For the cure of disease medical treatment should be directed to restore the original condition which nature requires, not by using remedies incompatible with the body requirement, but by rebuilding the citadel with its own natural material. Medicine can never become a science when wrong ideas in formulating prevail. As long as those chemicals that are never found in the body at any time are used as remedies, none but unsatisfactory results will obtain. Everything given as medicine should promote organization, and so prevent regressive changes by increasing the spermatic influence of cells.

There is no question but that carbo-hydrates can be formulated in such a way as to do their part without requiring the body to exert so much energy in their abstraction from food. It was once considered impossible to do this, believing that vitality should preside over their formation. The loss of force and energy in elaborating these products tend in time to bring about inferiority of tissue producing power which is one of the causes of premature cell decreptiude, atrophic processes, and the signs of premature old age. When the matter of supply in an assimilated form is obtained, this wear and tear will be done away with.

In sickness the potentialities lose proportionately their incentive to activity and thus involve the powers of recuperation. This is the time for the introduction of assimilated nutrition thereby lessening the expenditure of the energy required to continue organization through the digestive process. The body in disease is incapable of liberating the potentialities pent up in the food supply, and so there is a gradational consumption of the elements stored before the disease commenced. There is a physiological limitation to functionality beyond which pathological conditions arise, followed by grave chemical change due to disturbances of the potentialities. The lost balance is due to disturbance of the potentialities which can only be restored by the means always associated with them, and to aid nature rightly those means she first selected must be used.

Suppuration is one of the consequences of congestion; now if we can modify or control the potentialities, we can reduce the speed of burning and thereby prevent suppuration; thus, removing two of the most important conditions giving rise to degenerative changes, and so enable us to bid defiance to all those diseases arising from congestion and suppuration.

The process contributing to the chemical activity of the body is furnished by nature from the animal, mineral and vegetable kingdoms, from which is selected the matter to be transformed by the potentialities into the elements upon which cellular activity depends. During these chemical transformations if any interruption takes place a train of diseases arises; these diseases represent that particular stage of interruption, the re-

moval of which requires that we administer by proper medication those chemical elements, the lacking of which has given rise to such interruption. The method of ascertaining specific changes in the proteids, crystalloids, colloids, etc., in disease is known to the Physiological Chemist.

It is the accepted theory that all inflammatory conditions are due to pathogenic micro-organisms. Parasites may and do cause disease in many instances, but not all. These germs exist in proper environment, yet we have tuberculosis running its full course unto death without organisms in high altitudes above the germ belt; other evidence is not wanting. This fact shows conclusively that inflammatory processes are not always caused by specific pathogenic micro-organisms, as believed by most physicians to-day. What then is the cause? The answer is: premature decrepitude of the cell, which permits of degenerative processes and germ attack, whenever the normal chemical integrity of the cell protoplasm is interfered with. Now as the potentialities preside over chemical interchange we cannot but conclude that to restore the harmonious activity of these forces, they must be administered to by compatible medicine taken internally; thus disease may be overcome in a strictly scientific manner; in other words, furnish those compatibles which liberate heat, light, electricity and magnetism when acted upon chemically, and so develop the energy required.

Regarding the germ theory of disease, or its fermentative origin, it should be understood that physiological functionality is both analytical and synthetical in its fermentative process; that each cell of the body is a unit to this general contribution. Assimilation and nutrition are thus continued. Greater attention should be paid to the cause of normal fermentation than to the germs which cause abnormal fermentation. What seems to be the condition necessary for germ attack? Either disorganization or decrepitude of the cells. If there be no favorable conditions for attack, the germ remains harmless. Elevate organization in devitalizing processes and thus prevent attack. If a specific change in the composition of a part arises rendering it susceptible to the development and growth of living units, an environment exists making a condition evidencing disorganizing processes. These parasites are nature's means for removing disorganized products. When the potentialities are normally active they resist decomposition. When the life leaves the body they have ceased acting and decomposition is rapid; thus it is seen that by promoting the normal activity of the potentialities we fortify the body against invasion. By continuing potential activity we can prevent decomposition, and, in may cases, putrefactive processes.

The medical profession should direct its investigation to the study of those laws governing chemical or metabolic activity both in health and disease, and to the action of the physical forces concerned in the histochemistry of man. To illustrate, the premature decrepitude of the cells of the lungs is the cause of precipitating the tubercular diathesis—a disorganizing process permitting germ attack; to stop this process of disorganization, a treatment directed internally that will administer to the physical forces by chemical interchange is the only scientific ground for success. It is said that the germ itself by inoculation may start up grave pathological conditions. In reply I will say that the potentialities were susceptible to the disturbance; it is the overworked, debilitated, muscularly weak, devitalized people that are susceptible to contagion. If a germ can disturb the potentialities, the treatment should be directed to prevent this disturbance by the restoration of chemism.

The amount of nutrition abstracted from the food in a given time is very little in comparison to the amount of matter taken into the body. So that if we formulate the essential elements of nutrition that are to be assimilated, we shall find them to be very little in proportion to the amount of food taken in, from which they are abstracted. And as these chemical elements furnish nutrition, we have only to find out what these elements are that are abstracted from the food in order to furnish them directly for the purposes of nutrition in the absence of the inorganic matter taken into the body, which is not an essential, and must be returned again from whence it came. Now in order to prevent the differentiation from the normal integrity of the tissues, we must find that which is necessary in order to continue its integrity. This must have been derived from the analysis of the food taken into the body for the purpose of nutrition. When we find this we can introduce it at will, and consequently remove disease by preventing the differentiation of tissue.

To create an interest in formulation to restore the normal chemical integrity of the body by compatible medication rich in the sum total of the activities of the potentialities pent up in the different chemical elements and compounds contributing to the formation of the body, is the object of this paper. The potentialities of those elements which are not found in the body promote disorganization. From the three kingdoms there should be selected only those elements which enter normally into the chemical composition of the body. In the treatment of disease we should formulate from the elements found in the body in its healthy state; so that every remedy used would act in the same way under all circumstances, thus forming a complete system of scientific medicine.

To treat disease successfully we must prevent germ attack by elevating organization to the normal in all degenerative changes; to do this the potentialities which are more continuous than germs, must be administered to. Disease is the visible expression of internal disorder. For restitution of tissue appropriate the elements concerned in originating protoplasm before life associated itself with the cells of so called living bodies, viz.: sulphur, phosphorus, chlorine, hydrogen, nitrogen, carbon, oxygen, iron, etc. The chemical arrangement in formulation should be directed to the easy liberation of the potentialities; combined chemicals supply a mechanical mixture as ordinarily prepared. What is wanted is a chemical blending that separates the molecules into atoms, the atoms into the ether; a refining of the mixture, as it were. When iron and sulphur combine to form crystals they are rendered more transparent; light passes more readily through them, and the potentialities are modified and increased. The addition of sulphuric acid, which is very rich in the potentialities, will, with the aid of water, place the iron and sulphur very near to extreme possible divisibility.

The nearer we can render compatible chemicals by reduction to a complete whole, whose units would equal the most attenuated matter in space, the nearer we can place them to that ether which is a composition of the forces sustaining chemical harmony, and thus approach, by the only path, that base upon which scientific medicine can be founded with mathematical precision.

FORMULÆ.*

For all forms of Hemorrhage:

Ferrohydromal.

℞ Tincturæ Ferri chloridi (Squibb's)....℥j
Acidi Hydrochlorici Diluti.....℥j
Glycerinæ (Price) .....℥j
Acidi Oxy-Succinic (Merck's).....℥j
Aqua, quantum sufficit ad.....Oj
Misce. Signa

One to three drops in a teaspoonful of water every minute for ten minutes. Repeat in ten to thirty minutes if necessary.

For Night Sweats of Phthisis,

Oxyhyomalfer.

℞ Ferrous Chloridi.....gr. xl
Acidi Hydrachlorici Diluti.....℥ss
Acidi Sulphurici Diluti.....℥ij
Acidi Oxy-Succinic (Merck's).....℥ss
Saccharum .....℥ij
Aqua, quantum sufficit ad.....Oj
Misce. Signa

Twenty drops in a tablespoonful of water three to six times a day.

To prepare the Ferrous chloride put five drams of dilute hydrochloric acid in a bottle and add to it forty or fifty grains of clear iron wire. Allow to stand over night, then filter, and wash the filter and residue with four ounces of water, then heat to boiling before adding other ingredients.

Then add the Ferrous chloride to the sugar; then acids; then water q. s. to make a pint; then dissolve the Oxy-succinic Acid in a mortar and add. Strain or filter. Color should be of a greenish tinge.

The following will be of interest to throat and nose specialists, as it is efficient in curing chronic hypertrophic rhinitis; especially is it of value in curing catarrhal deafness of long standing:

Hydroferrional.

℞ Ferrous chloridi .....℥ss
Acidi oxy-succinic .....℥ss
Acidi hydrochlorici diluti .....℥iv
Syrupi, q. s. ad. .....Oj

M. Sig. 5 to 10 drops in a tablespoonful of water after each meal for rhinitis.

For catarrhal deafness, 3 to 5 drops in water after each meal for one to two years.

To make the ferrous chloride, use four ounces of dilute hydrochloric acid and a sufficient quantity of iron wine; allow to stand over night, boil, cool, filter, and add the other ingredients, first the syrup, then the oxy-succinic acid.

The following will be found to be a superior tonic For all forms of Anemia,

For Chlohydromal.

℞ Tincturæ Ferri chloridi (Squibb's)...℥v
Acidi Hydrochlorici Diluti.....℥vi
Acidi Oxy-Succinic (Merck's)...gr. xlv
Glycerinæ (Price's) ad. .....oj
Misce. Signa.

Fifteen to twenty drops after each meal followed by a swallow of water.

To make, mix the Tr. Ferri chloridi and dilute acid, then add glycerine; after which dissolve the Oxy-succinic acid—strain.

The following formula has been used successfully in curing Lupus, Rodent Ulcer, Tubercular Abscess, Tubercular Ulcerations, Tubercular Glands, Tabes, Dorsalis, all Neurasthenic conditions, and some forms of Paralysis, Cerebral Softening, Fatty Degeneration and Phthisis. Its use should be continued from six months to two years or possibly more if cure be not completely effected. No possible harm can come from its use. Dose should be reduced if too stimulating, especially in Lupus.

Malca.

℞ Potassium Carbonate (Merck's)..℥viiiss
Acidi Oxy-Succinic (Merck's).....℥iij
Aqua q. s. ad.....oj
Misce. Signa

Five to ten drops in a tablespoonful of water one hour after the morning and evening meal.

The acid (previously powdered in a mortar) should be added slowly to prevent too active effervescence. Let stand ten minutes, and filter through two thicknesses of white filter paper. The fluid should be of crystal purity. The water used should be freed from fungi by three boilings. Articles of diet containing acetic acid, such as apples, pickles, vinegar, cider, etc., should be prohibited during its use, and all drugs that are incompatible to the body's requirement, especially the coal-tar derivatives so extensively prescribed today, and which being incompatible are unscientific and should never be used. The profession is welcome to the above formulae, which will prove their value in all cases of disease requiring their use. They serve to illustrate the theory explained in this paper. "If the theory is correct the results must be."

Chemically pure chemicals only should be used in these formulæ. As alcohol is a product of decomposition it should never be used in formulation; it is a non-compatible.

It is hoped that the Medical Journals will give prominence to the above prescriptions for they not only illustrate scientific medication on a compatible basis, but "they do the work" and are harmless. They are almost specifics.

Copies of my first paper will be furnished to physicians on request without charge.

* For reference in future papers in which other formulæ will be used in connection with the following in the treatment of diseases not herein mentioned, I have attached names to each formula, they being complete in themselves as remedies. Although not strictly scientific as names they are as near to it as time will permit at this writing.

NUTRITION IN EMERGENT CASES.

BY A. L. BENEDICT, M.D., BUFFALO, N. Y.

IMAGINE a patient in grave danger of death, poorly nourished for some time and unable to take food in proper amount for some days before our attendance on the case begins. The case may be one of typhoid, of some other continued fever, of gastric or enteric inflammation, of cancer, of some pulmonary complaint, of Addison's disease, of parturition, of vomiting of pregnancy or any other condition, the indications and danger are much the same. The patient will die, if not of actual inanition, at least of asthenia from lack of food if we cannot force nutrition, yet apparently is prevented from obtaining the necessary nutriment either on account of vomiting or repugnance to food or because the food taken is hurried through the alimentary canal by a diarrhea or ferments and putrifies on account of vegetable growth within the body or it simply is not absorbed. The name of the disease has very little to do with the immediate practical aspects of the case; the diagnosis of the exact reason which stands in the way of nutrition, and skill in meeting the condition or conditions present mean life or death.

Occasionally there is nothing but repugnance to food

to be overcome; at other times, everything will go well if we can merely prevent vomiting; again internal sepsis is the prime factor; or diarrhea or absorptive failure must be combatted; sometimes the trouble is literally an indigestion and here, the pancreas is usually at fault, for we can scarcely maintain that the gastric or intestinal ferments are of paramount importance in nutrition; sometimes, various factors are united. Death crouches over the patient and mockingly asks "What are you going to do about it?"

We recall a patient, turned over to a colleague on account of a syphlitic affection of the knee, not apparently of grave importance but who ceased to eat and who began preparations for her funeral. There had existed previously a gastric catarrh or functional failure of gastric digestion—it is often difficult to decide whether the catarrh or the lack of innervation is the essential element—but this condition had abated and there seemed no reasonable doubt as to the fortunate issue of the case. Here, the main indication was to induce the patient to eat! Once started on the simple process of ingestion, there was no question but that enough food could be retained and assimilated. In another case, one of puerperal insanity, there had been repugnance to food and much vomiting. Rectal enemata had failed and the usual liquid nutriments had been tried. It happened that the patient had remarked favorably on the odor of baked potatoes and she was given, as soon as it could be prepared, a meal of steak and potatoes which she retained and there was, thereafter, little trouble in feeding. In general, when the obstacle to nutrition is mainly psychic, the problem is not so much with regard to the digestibility or nutritional value of food, as it is to induce the patient to take something. Moral suasion and tact rather than science are the requisites.

In the more serious cases, it seems that too much empiricism and too little theory have been employed. Often, too, the statements of manufacturers of proprietory foods have been accepted with too little reserve. If the case is one of local gastric or upper intestinal irritability, the indication is plainly for rectal alimentation. In this way, insufficient nutrition but still enough to maintain life, may be kept up for a variable period, seldom exceeding two weeks before the bowel refuses to retain nourishment. This subject requires more elaborate discussion than the limits of this article allow.

In many instances, the bowel refuses at the beginning to retain nourishment and the problem is limited to the introduction of food by mouth. The common errors are:

1. To ignore the need of other than proteid food.
2. To administer nitrogenous extractives that are not even proteid but that are either gelatinous or actually waste products and which are at most, of use as appetizers and stimulants but not as food.
3. To employ liquid nourishment as a matter of routine and without regard to the actual indications.
4. To administer foods in too small amount and too frequently.
5. To neglect the predigestion of food and the attempt to prevent fermentation and muscular reflex on the part of the stomach.

It is difficult to say just how little food may be used to support life, as it is to estimate the minimum of fuel by which the fires of a furnace may be kept up and some measure of its energy maintained. The minimum subsistence ration has been stated by Mrs. E. H. Richards at 75 grams of proteid, 40 of fat, and 325 of carbohydrate. But certainly, a patient in bed, taking no exercise and radiating comparatively little heat, may be kept alive with much less. Indeed, if water is given—and this, at least, may be introduced through the skin, if in no other way—very few persons otherwise healthy, would starve to death within thirty days. Experimental proof of the minimum sick ration is, obviously, lacking nor is it possible from "experience" to say how far death depends on the asthenia of disease and how far upon mere lack of food. The nitrogenous waste of the body is, however, very rarely reduced below ten grams a day or, approximately, five grams of N., corresponding to about 30 of proteid. It is not feasible to estimate the elimination of carbon but we may guess that 200 grams of fat and carbohydrate, together, may be taken as a minimum. On the other hand, the body has more or less reserve of all foods, especially of fat. A quart of milk will supply rather more than the necessary minimum of proteid and about 40 per cent. of the fat and carbohydrate. The white of an egg, weighing about 27 grams, contains about 5.5 grams of proteid and very little else in the way of organic nutriment. Thus, six a day would about supply the needed minimum of proteid. A whole egg weighs 40-50 grams including about eight grams of proteid and 5 of fat. Expressed beef juice contains about 6 per cent. of albumin and comparatively little other organic nutriment, so that about a pint a day would be needed for the minimum proteid supply. The proprietary meat extracts rarely contain more than this amount of available proteid. Among the combination, proprietary milk foods, are several that contain maltose, dextrin and small amounts of cooked but undigested starch, fats, and proteid in approximately the amounts necessary. Thus, if we can administer 250 grams a day, we shall have introduced the minimum of nutriment. Milk is rendered mechanically more digestible and the albumin is partly predigested, by adding HCI drop by drop till twenty minims of the official dilute acid have been added to a pint.

An extremely important point is to decide the amount and frequency of feedings. Bulkley has suggested that milk may be given at the body temperature so as to pass through the stomach without stimulating its secretion. Unfortunately, there is no proof of this theory. Ordinary "peptonized" milk is partly digested after the analogy of pancreatic digestion. To reinforce digestive power within the body, it seems best to use one of the pawpaw derivatives, whose effect is independent of reaction and other circumstances. It is extremely doubtful whether we can ever ignore the gastric function. That is to say, while the stomach may not be able to digest, it will still make something of an attempt at digestion and will not quietly pass the food onward without at least the usual delay. Thus, the attempt to introduce food every half hour or every hour, is to be deprecated. True, the stomach may retain the minimal amounts usually given in this way but it is confused in its function and the retained food is likely to be vomited when enough has accumulated. At any rate, the not uncommon plan of administering a teaspoonful or a few drops of egg water or milk or other liquid food in this way, can be of no utility. While it is unnecessary and unwise to give the total feeding at one draft, it should be given within an average meal time and the feeding should not be repeated within the minimum period of two hours observed in the case of infants. Moreover, a teaspoonful of any liquid nutriment, containing rarely over 6 per cent. of any kind of nutriment and 10 per cent. at a maximum, is altogether too small to be appreciable. H. C. Wood's memorable simile to the Chicago fire is

appropriate in this connection. We cannot by any possibility feed often enough to introduce the requisite amount of nutriment, half a gram or less at a time, without fatiguing the patient and increasing the digestive weakness, the gastric irritability and the absorptive failure. To be sure, patients thus played with have recovered but so have they after the administration of high potencies of drugs supposedly beneficial. It is difficult to set a practical limit of size in feeding or dosing, and we have to contend with two fallacious arguments, that of the dwindling heap and that of post hoc, ergo propter hoc, yet, we may arbitrarily adopt the white of one egg and an ounce of milk or other liquid nourishment as the practical minimum and say that if the patient can not take as much as this at one feeding, it is better to let the stomach rest absolutely, even if no nourishment can be given by the rectum, relying on strychnine and saline infusions through the skin, to stimulate the vital functions.

PERNICIOUS ANEMIA WITH CASES ILLUSTRATING DIAGNOSIS.

BY A. R. WILLIAMSON, M.D., PHILADELPHIA.

THE most modern idea of the origin of pernicious anemia is that hemolysis, or blood destruction, has become so increased that normal hemogenesis, or blood development, is unable to maintain the normal conditions. Modern investigators have found many proofs of the existence of hemolysis in the fragmented red corpuscles in decolorized corpuscles which displayed the simple frame work of the corpuscles, and it is believed by Stengle, in the poikilocytes. These bodies are undoubtedly produced only as a result of destructive causes. Still on this they do not furnish positive proof.

There are other conditions which show the fate of the coloring matter and other constituents of the blood after disintegration; among these, and one of the most significant is the deposit of pigment containing iron in the outer zones of the hepatic lobules. This has been noted by many observers and is undoubtedly characteristic of pernicious anemia. It is not due probably to the hemolitic action of the liver but simply because that organ stores up pigment matter which has been liberated in other proportions of the portal circulation. We see the same phenomenon in the yellow pigment of the skin and the eyes. Naturally, the iron is not only deposited in the liver in excessive quantities but the amount discharged in the bile is also increased and the color of the urine is deepened also. Again, the decreased number of the white corpuscles is further shown by the excess of uric acid found in these cases. It has been thought by some observers that the fever of this condition is due to the same source. When it comes to the question of defective hemogenesis we note, as Henry has pointed out, that the later form macrocytes, must come from some error in blood formation and are not products of hemolysis; also, the presence of enucleated red corpuscles in indication of partially unsuccessful efforts at restoration of the normal number of corpuscles. When it comes to the question of the source of these changes in the blood we find that they generally are traceable to lesions of the gastro-intestinal tract, for example, Fenwick pointed out remarkable atrophy in the mucous membrane of the stomach and in the stomachic glands, while other writers have noted atrophy of the glands, ulcerations of the duodenum and stomach and changes in the ganglia of the stomach walls. Stengle reports a case in which there was a history of gastric trouble for fifteen years, although the patient remained in a fair state of health. Subsequently, however, the patient began to grow bloodless and general appearance of blood presented the characteristic signs of pernicious anemia. Cirrhosis was discovered and partial destruction of tubules.

Stengle does not consider that gastric lesions can be regarded as secondary to pernicious anemia. It is still a matter of doubt as to the method by which these gastro-intestinal lesions produce an anemic condition of the blood. If pernicious anemia is a hemolitic disease we can not regard the existence of the lesions as simply due to causes which interfere with proper nutrition. This may be somewhat of a factor but it is not the only one certainly. It would seem as if there were poisonous substances within the gastro-intestinal tract which cause the hemolitic action of the blood to overcome the blood making properties. This has been well illustrated by a case of Sandoz who found that lavage of the stomach improved a case of progressive anemia where there were prominent gastric symptoms. Hunter injected toluylendianine into the splenic vein and found that the blood showed hemolitic changes, therefore, he believes that the active agents in this blood destruction are certain forms of poisonous substances.

In taking up the diagnosis of pernicious anemia it is undoubtedly true that the latest view of this disease is the correct one. This is that it is a form of intense aligocythenia which has a tendency towards progressive deterioration accompanied by certain definite symptoms which exist despite the ability of the pathologist to find any definite cause, therefore, the diagnosis must depend upon the character of the blood and the general symptoms of the case and not at all upon the possibility of determining any etiological cause. It is true that there is no one symptom in pernicious anemia on which a diagnosis can be made, but there are a number of striking features to be seen on examination of the blood. In the first place, there is great irregularity in the shape of the red corpuscles, to which the pathologists in their love for long terms have given the name poikilocytosis. This is commonly considered characteristic of pernicious anemia, but there is also the existence of microcytes and macrocytes and also the small red cells with bright coloring and high refraction which have been called to the attention of the profession by Eikorst. It has been claimed that the mobile character of the red corpuscles is pathonomic of this condition, but it has been demonstrated recently in other diseases. The most characteristic condition, however, is possibly the relative excess of hemoglobin. The blood, in pernicious anemia, shows a great reduction in the number of red corpuscles without equal diminution in hemoglobin so that the individual corpuscles remain rich in coloring matter although, of course, there is considerable decrease in hemoglobin. This fact has been noted by many different observers, among them Brackenridge, Demme and others.

In the genuine pernicious anemia the reduction in red cells in usually below 1,500,000 and has been reported as low as 800,000, which is about 16 per cent., while at the same time hemoglobin remains at the rate of 35 per cent. Stengle has examined 100 consecutive cases of gastro-intestinal, cardiac, nervous, pulmonary and intestinal disease in which there existed a certain amount of pallor, and he has found that in no case did the series of red cells run below 2,300,000 or 46 per cent., and in none was there any relative excess in the hemoglobin. In a marked case of gastric cancer in which the anemia looked as marked as in a bad case of pernicious anemia there was 57 per cent. of red corpuscles. Again,

and finally, Ehrlich has laid great stress upon the significance of large red corpuscles containing nuclei, for which he has proposed the name megaloblast, but it is believed now that these corpuscles are not necessarily present in pernicious anemia and have been observed in other diseases outside of this condition, such as purpura. It is, of course, necessary to distinguish this condition from anemia following gastric cancer and from chlorosis.

Anemia following hemorrhage is frequently intense, and the patient may have a deathly pallor but it does not show the characteristic lemon color seen in pernicious anemia. Again, pernicious anemia is a rather slow disease, never coming on abruptly. Of course, when we are able to find a specific cause for an anemic condition, such as can be found in chlorosis, in gastric cancer, in rectal, uterine or stomachic hemorrhage, it is possible to make a definite diagnosis, but blood counts below 1,000,000 are extremely rare in these cases. It has been claimed by some writers that chlorosis tarda, or the chlorosis of later life is sometimes confused with pernicious anemia, but from the critical points of pernicious anemia as already pointed out, it is impossible to make a definite diagnosis, and of course, it is possible that one disease may gradually glide into the other form.

As yet the treatment of pernicious anemia has not been sufficiently brilliant to make any physician feel conceited over the results he has obtained, but the fact that it has a tendency to a fatal termination should not allow the physician to become discouraged or lax in his treatment, for it is possible to obtain a temporary improvement, and there have been reported in medical literature from time to time, cases of permanent cure.

Bramwell was the first to introduce into the treatment of this disease regular and repeated doses of arsenic and this drug has some times been found very valuable so much so that at times it has almost amounted to a specific, but, in other cases, for some unknown reason, it has been a failure. This drug is administered most properly in the form of Fowler's Solution, beginning with small doses and gradually increasing to fifteen or more. In some cases where gastric disturbances have followed the use of this solution, pills of arsenious acid may be employed and in some cases the drug has been used hypodermically. The physician should look for the danger symptoms of diarrhea, or other intestinal symptoms, as the loss of ground following an attack of diarrhea is able to upset any gain secured from the use of the arsenic. Although the tolerance for this drug is in some cases quite remarkable, as a rule, about fifteen drops should be the maximum dose. In regard to other measures it is always well to remember that the patient should be confined to bed so strictly that the use of the bed pan and urinal should be required. The diet should be most nutritious and easily digested although meals should not be too freely given on account of the tendency to the secretion of hydrochloric acid. Sugar and starchy foods should not be allowed in large quantities from their well known tendency to fermentation. Of course, symptoms should be treated as they arise, digestion aided and extreme irritation allayed. Hydrochloric acid is frequently necessary when fermentation is complained of. For extreme irritation and nausea bismuth sub-nitrate combined with a little cocaine may be found to act very happily. At the time of using these drugs it is possible to use the arsenic a little more regularly, giving the arsenic after meals, the bismuth and cocaine before.

Of course, the pathology of the disease suggests that gastro-intestinal disinfectants should be used as far as possible. For this purpose lavage of the stomach has been employed by a number of authorities with excellent effect, for it not only prevents putrefactive changes in the stomach and intestines and minimizes the absorption of poison, but is excellent in controlling vomiting and stimulating digestion. As in other cases where lavage is employed it is frequently difficult to use this form of medication, but as a rule, the patient will grow accustomed to the stomach tube after a time. It has been suggested that the small intestine be flushed out by a high injection, but as yet very little has been reported on this therapeutic measure. The use of intestinal antiseptics, such as salol, carbolic acid, etc., would seem to be indicated theoretically, but results from its use have been doubtful. It is well to avoid the use of purgatives, and so far as possible depend upon enematas or suppositories. The use of massage is most excellent in this condition for it stimulates the circulation of the blood and prevents any portion of the circulatory medium remaining in the tissues. When the case has become so bad that the lack of blood has become a serious matter, the injection of normal salt solution has been recommended. The transfusion of blood has been tried, but it does not possess any advantage over salt water and there is the danger of fibrine-fermentation, intoxication and other accidents. In case the patient should improve, the use of iron is also indicated, although it does not seem to be of any value until the primary improvement has been produced by arsenic.

In the past many authorities have attempted to deny that pernicious anemia was an independent disease, but undoubtedly, it can so be regarded to-day, and possibly, one of the brilliant discoveries of the next few years will be its genuine etiology, when treatment can be based upon a more scientific and therefore a more hopeful plan of therapeutics.

The following three cases are taken from my hospital records to emphasize the pecularities of the differential diagnosis between incipient tuberculosis and pernicious anemia. The first case is that of a boy whose symptoms upon admission to the hospital were merely manifestations of great weakness. He has so far deceived us that were it not for the disclosures of the microscope we would still be groping in the dark. I suspected at first typhoid fever, and the patient was accordingly kept in bed and closely watched. His urine was examined without any positive results. Its specific gravity was 1012; there was neither any sugar nor albumen demonstrable and the diazo reaction negative. A blood examination showed a slight leucocytosis, a rise to 10,000. No Widal reaction could be obtained. He had a slight fever, the temperature being 100.1°, but has now fallen to 99.°. This, with the increase in the leucocytes caused me at first some anxiety. Despite the absence of the Widal reaction and the presence of the leucocytosis I thought that I must be dealing with what had been a very mild case of typhoid fever which was now in the stage of decline, and which had been characterized only by premonitory symptoms. There are, however, several arguments against this diagnosis. In the first place the temperature is very unlike that seen in the convalescence from typhoid fever. There is not the subnormal morning temperature and the evening acerbation which are characteristic of this disease. The temperature in this boy has been very irregular. Then the persistent absence of the Widal reaction must be given some consideration, for you must remember that although not constant, it occurs in from 92 to 95 per cent. of cases. Its continued absence is, therefore a point which should be given some attention. The leucocytosis was also against

the diagnosis. The white corpuscles numbering at first ten thousand have increased now to twelve thousand. I administered a purging medicine after the patient had been in the hospital for two weeks. This was productive of some tenesmus, and the patient desired to defecate almost every two hours. I accordingly examined the rectum, but obtained no results, the symptoms having been due probably to the purgative.

There has been, up to the last few days, practically little or no cough. This is a case in which the laboratory has been of considerable service. The blood examination was negative as far as a diagnosis was concerned. It showed that there was probably no typhoid fever. Four days ago, however, it gave us a clue without which we could not at present have made a correct diagnosis. In the slight excess of sputum which the boy expectorated the tubercle bacillus was demonstrated. It is merely upon this microscopic finding that there is base for the great probability of an incipient tuberculosis. The blood count seems to contraindicate this. The red blood corpuscles number 5,297,000, the hemoglobin is 87 per cent. This is a blood condition much better than is found in most healthy people.

As you look at his chest you may note that it is rather long and flat. The subcostal angle seems normal. The expansion at the apices is not good. Tactile fremitus on the right side is somewhat increased. Auscultation shows on the right side breath sounds that are harsher than normal. If the patient coughs some bronchial râles are heard, but there are no subcrepitant râles whatever. The abdomen is somewhat flat. There is no enlargement of the spleen and no abnormalities of the liver.

In order that you may fully understand the type under which this case comes I will speak of the main subdivisions of tuberculosis. There are three. The first type is the so-called galloping consumption or acute pneumonic phthisis. This is the form of tuberculosis which has been so frequently confused with pneumonia until subsequent development showed the real character of the trouble. The second variety is ulcerative tuberculosis and is the form which is most commonly met with. The onset in these case is characterized by various symptoms. In women there is gastric disturbance with signs which for a time simulate chlorosis. Soon, however, the loss of flesh, the cough, and at times glandular enlargement place us on our guard. The glandular enlargement may commence at almost any location but is most common in the peribronchial glands. This type of the disease involves usually one or the other of the apices, generally the left. There is a cough, expectoration, progressive emaciation, fever, and sweats. Sooner or later cavity formation takes place in the lungs and all the symptoms of a hectic temperature set in. The third variety, fibroid phthisis is perhaps the least malignant form of tuberculosis. It is characterized by an overgrowth of the pulmonary connective tissue. The pleura becomes adherred. This process may last many years, and the excess of fibrous tissue may be so great as to pull the heart entirely over to the right side. I have seen such a case. This form of phthisis gives us a more favorable outlook than either of the others. Its symptoms are less uncomfortable to the patient than any of the others.

This boy's case is one in which the pulmonary symptoms have not as yet become marked. The disease commenced most likely as a glandular infection, the primary seat of lodgment of the bacillus being probably the peribronchial lymphatics. These are usually the first glands to be affected and by their breaking down infect the bronchial tissues, which subsequently ulcerate. Thus the pulmonary tuberculosis is usually secondary to a glandular infection. On the other hand the pulmonary infection may be primary and followed by a generally glandular infection. The glandular infection may remain independent of any secondary infection. For this reason we have become somewhat skeptical in regard to some glandular diseases that have received distinctive names. For example, in Hodgkin's disease there is a general glandular involvement without any central area of caseous degeneration and without any pulmonary infection. Recent investigations have shown that although the bacillus of tuberculosis has not been demonstrated in these cases, the tuberculin reaction can be obtained. This is a rather significant discovery. We have still to work out, however, whether there is not first a purely glandular disease followed subsequently by a tubercular infection. This boy is probably in the incipient stage of tuberculosis. It is likely, as I have said, that there is a peribronchial involvement which has enabled us to obtain the bacillus in the sputum. The patient has had no cough until the last twenty-four hours. The only marked symptom has been his extreme weakness. His temperature at first gave us no indication of the trouble but it has become now somewhat suspicious. The pulse on admission was 78, a rather unusual state in these cases, where it ranges at about 100. Having suspected typhoid fever we have kept our patient in bed. What he needs, however, is plenty of fresh air and exercise with no medicine except, perhaps, large doses of strychnine to stimulate his failing strength.

The next case to which I wish to call attention is that of a colored woman who was admitted to the hospital on the tenth of October. Her family history is of no importance. She is thirty-two years old, single, and does housework. She has never menstruated and has never been seriously ill up to the present time. For the last four years, however, she has occasionally had abdominal pains, especially when lifting. They were at times accompanied by vomiting and diarrhea. She has used alcohol rather freely. Her present illness dates to five days before admission, when she suddenly developed a pain in the right costal region and in the region of the stomach. There came on at the same time a violent diarrhea accompanied by tenesmus. Her bowels moved as often as twenty times a day. There was at the same time vomiting, the vomit being of a greenish bilious character. She completely lost her appetite but developed an extreme thirst. Severe headache set in and there was some cough. She has experienced night-sweats.

At the present time she has fever, but on admission her temperature was 97°. This rose the next day to 98.1°, thence to 103.2°, but has subsequently declined to 101°, where it has been for several days. On the first day physical examination showed defective resonance at the lower lobe of the right lung. The breath sounds were almost entirely absent. There was pain and tenderness over the liver and flatness over the right flank. On the next day I found that the dull area of the right lung had extended further upward. There had now developed some fine crepitant râles. The sputum had assumed a rusty color and was rather viscid. She had, therefore, all the signs of a croupous pneumonia. Microscopic examination demonstrated the presence of the tubercle bacillus in the sputum. The temperature came down in a few days, but a slight degree of diarrhea persisting we examined the stools. These were of an exceedingly fluid, viscid character and were found also to contain the tubercle bacillus. The physical signs gradually cleared up and the patient seemed to be unquestionably better. This condition is, therefore, a very different

one from the first. We have in this case an acute onset in a woman who has had for several years back, abdominal pains and vomiting. On admission we found the gland all over the body and the cervical glands in particular were decidedly enlarged. There were, moreover, all over the body, scars which upon inquiry proved to be evidences of an old adenitus, during the course of which the glands had ruptured. The tongue is still coated. There has been some ulcerated condition of the mouth, a great deal of stomatitis, with extreme thirst and a very dry pharynx. The woman's voice is slightly hoarse. As I now examine her, I find that tactile fremitus is slightly increased, and that the vesicular murmur is again present. The abdomen is still rigid, especially on the right side, and is very tender. The dullness on this side has entirely disappeared. The abdomen is round. The patient still has a slight diarrhea, but is much improved.

This is a rather unusual type of the disease of which we have been speaking, and the question arises, is this a case of pneumonic phthisis? Upon the last two examinations of the sputum no tubercle bacilli were found. Where, then, is the primary seat of the trouble and how can we account for the presence of the bacillus in the sputum and the stools? Considering the present condition of the lungs, it is hard to account for the occurrence of the bacillus in the sputum. The woman has had all the signs of pneumonia. Had this been acute pneumonic phthisis the chest would not have cleared up as it has done. The temperature would have been different and the patient would have rapidly gone on to a consummation. I think, therefore, that the more probable explanation is that we have here a case of tubercular peritonitis and a general lymphatic enlargement. She has had in childhood what was commonly known as scrofula. One of these tubercular glands might have ruptured and caused the condition which we now find. The abdominal signs point undoubtedly to a tubercular peritonitis associated with a dysenteric condition of the bowels. This tubercular peritonitis may be of several varieties.

There is an acute fulminant form similar to the same condition of the lungs. In this type there is fever, abdominal pains and ascites, the drained off fluid containing some blood. Most of these symptoms have occurred in this woman's case. The prognosis is usually very bad, most of the cases resulting fatally. Another variety is the fibroid tuberculosis of the peritoneum, similar to fibroid phthisis. This condition is chronic. The production of fibrous tissues is very great. The mesentery may become so rolled up and indurated as to simulate a tumor. Histological examination of this tissue shows the presence of tubercle bacilli and caseous degeneration. The amount of liquid effusion varies within wide limits and usually blood stained. A third distinct variety is the general tubercular peritonitis which is so frequently associated with other diseases. Foremost in this connection is cirrhosis of the liver, dilute hydrochloric acid in a bottle and add to it forty lous peritonitis. Such a case occurred in this hospital last year.

This woman, I am inclined to think, has such a peritonitis. All indications point to this diagnosis and until further developments we can make no better diagnosis. Upon the peritonitis the pulmonary lesions are superimposed and have probably no connection with the tuberculosis.

The third case was a young man suffering from genuine pernicious anemia. He has improved to a remarkable extent. His blood count two months ago showed a grave poverty of the blood constituents. The red corpuscles numbered .58,000 and the white 3,950. Megaloblasts were abundant and there were also a large number of nucleated red corpuscles. A differential count showed a great excess of small lymphocytes, these amounting to 42 per cent., while the polymorpho-nuclear variety were 51.9 per cent. We put the man to bed and gave him gradually increasing doses of Fowler's Solution. The improvement under this treatment is wonderful. He complained, however, of a troublesome diarrhea which was probably due to the arsenic being administered. To counteract this action we gave opium in the form of paregoric. This has been productive of the desired result. Blood examination several weeks has shown an increase of the red corpuscles to 843,000. The hemoglobin was also considerably increased and the number of leucocytes was much greater. The last blood count showed that the red corpuscles are now over 2,000,000, the hemoglobin increased to 50 per cent., and the leucocytes are still further increased.

The value of arsenic in these cases is variously considered by different observers. It is asserted by some that it is of practically little or no value. My experience, however, and the experience of others with the drug have shown that excellent results may be obtained. The best action of the drug can be obtained by gradually increasing doses, commencing with four or five drops three times daily and increasing one drop to the dose every day until the point of tolerance is reached. It should be given well diluted. Under such treatment this patient, when he was previously in the hospital, was so much improved as to be able to go home. As is usual in these cases there has been, however, always a relapse. The administration of the arsenic must be closely watched since it is frequently productive of nervous symptoms. You may recall the recent epidemic of neuritis in England which was found finally to be due to the ingestion of arsenic through beer in whose manufacture impure materials were used. Marked gastro-intestinal disturbances may also be produced by the drug. In such cases the doses may be decreased as the symptoms appear or the medicament may be administered hypodermically. We may, as in this case, combine drug such as opium to counteract the detrimental action of the arsenic.

This man, the last time you saw him, had a very large liver. Now it is of normal size. The tongue is still red and as is usual in pernicious anemia, absolutely denuded.

There is a theory that pernicious anemia is due to infection from substances which are swallowed. But some cases are very difficult to account for by this supposition. Thus the anemia which follows pregnancy would need a different explanation. We can define anemia merely as a disease associated with the destruction of the blood corpuscles. The red corpuscles are greatly diminished, the counting being frequently below 1,000,000. Such diminution is found in no other disease except possibly in cancer and in this condition it is not usual.

Treatment of Piles.—Dr. George W. Gay makes the following deductions (*So. Cal. Pract.*) respecting the treatment of piles by the injection of carbolic acid: 1. Inject only internal piles. 2. The solution of carbolic acid should not exceed ten per cent. 3. Do not repeat the operation under a week. 4. Inject only one or two minims into each tumor. 5. Inject not more than two piles at any one time. 6. Promise relief only, and not a radical or a permanent cure.

RECENT RESEARCHES IN THE CHEMISTRY OF GOUT AND KIDNEY DISEASE.

BY A. C. RICHARDSON, M.D., PHILADELPHIA.

AS yet we do not know fully the precise character of the changes in metabolism in gout. Defective oxidation of the food constituents combined with imperfect elimination of the waste products of the body are undoubtedly the basis of the trouble, but the exact details are slowly being worked out. Balfour states that "Gouty Diathesis" is only a comprehensive term for all of those changes in the character and composition of the blood induced by the evils of civilization, which are deficient exercise, and excess of nutriment. Garrod was the originator of the theory that there is an increase in the uric acid due chiefly to diminished elimination with lessened alkalinity of the blood. Neusser in 1894 described a peculiar black granulation about the nuclei of the leucocytes which he had discovered in the blood of gouty people, which he termed "perinuclear basophilic granules." He considered them a form of albumen. He thinks these granules are "mother-substances" from which the uric acid is formed, but as yet no especial confirmation has resulted from the work of other authorities. Haig, who is one of the great authorities on gout, believes there is no increase in the formation of uric acid in gout, but that the blood is less alkaline and is less capable of holding in solution the uric acid or its various salts.

The chemistry of gout has been clarified by the researches of Roberts, which are of especial interest at the present time, when the chemical problems of this disease are attracting less attention and the share of the nervous system in its causation has been maintained by Duckworth in his treatise on the subject. Roberts points out that the presence of uric acid in human urine is an anomaly, as urea is a far more suitable vehicle for the elimination of nitrogen from the system; and he suggests that possibly the uric acid is a vestigial remnant. Uric acid, being bibasic, has two classes of salts —the neutral urates and the biurates (M_2U and MHU). It forms a series of hyperacid combinations, in which one molecule of acid urate is combined with a molecule of uric acid (MHU, H_2 U). The neutral urates are not found in living organisms, and the biurates are found only in gouty concretions. The quadrurates are found in normal human urine, being the entire urinary excretion of birds and serpents. Water immediately decomposes the quadrurates into biurate and uric acid. In the urine, the biurate so formed is immediately reconverted into quadrurate, owing to the presence of the hypophosphates; so that the entire quantity of uric acid is ultimately thrown down in the free state. This process is shown in the presence of saline substances and pigments in the urine, while the deposition of the uric acid is favored by acidity, by poverty of saline substances and pigment, and by the presence of a high percentage of uric acid; the acidity being the most potent factor.

Sodium biurate is deposited in the blood in gouty tophi, being apparently the result of the tendency of the quadrurates to become converted into biurates, in an alkaline solution, taking up an additional atom of base. In healthy persons the quadrurate in the blood is eliminated by the kidneys, but in gouty persons the quadrurate is retained longer than usual in the blood, owing to the results of a deficient action of the kidneys; in a medium full of sodium carbonate it is slowly converted into the insoluble biurate, which the kidneys eliminate slowly. As soon as the quantity of biurate accumulates in the blood to a sufficient amount, it is deposited in crystalline form in the joints, producing gout. Blood serum is less capable of dissolving the biurates, or of holding it in solution than pure water. Uric acid is taken up freely by such media, but in the course of a few hours is precipitated as sodium biurate, constituting gouty concretions. Roberts describes these three stages as "solution, maturation, and precipitation."

Precipitation occurs more quickly in synovia than in blood serum; increased alkalinity of the medium favors solution, but does not retard maturation or precipitation: the addition of salts of sodium hastens maturation and precipitation; the addition of salts of potassium, lithium, or magnesium, has no effect either way, except that potassium chloride appears to retard maturation; that maturation is hastened, and precipitation occurs sooner at a temperature of 100° F., than at the ordinary temperature of a room; and, lastly, that the proportion of uric acid in solution has the greatest influence in determining the speed of maturation, and the advent and copiousness of the precipitate. Such are Roberts' conclusions. When the proportion of uric acid was less than 1 in 4,000 the precipitation was gradual and scanty, and was postponed generally ten to fifteen days.

The presence of uric acid in the blood has been studied by Von Jaksch, who gives to the condition the euphonious name of "uricacidemie." He takes up the two propositions, whether, in the acid intoxication described by himself, and Pfeiffer, uric acid has any part, and (2) whether uric acid in the blood is necessarily pathognomonic of gout. Obtaining by wet cup 90 to 300 grammes of blood from nine healthy persons, no recognizable amount of uric acid, nor of xanthin bases, could be found. In such diseases as multiple sclerosis, tabes, multiple neuritis, and cerebral tumors, he could find no uric acid, but xanthin bases, and especially hypoxanthin. His investigations were negative in eight cases of typhoid, but in one other in which the temperature had come down he detected a trace of uric acid. Also in the afebrile stage of intermittent fever some uric acid was found, although none was detected during the febrile stage. In digestive diseases uric acid was only found when there was anemia, also in cases of heart disease with cyanosis; often in pleurisy with effusion, and always in pneumonia. No uric acid could be detected in the blood of patients with rheumatic fever. In kidney disease and primary and secondary anemia, considerable quantities were found. Van Jaksch negatively answers his first question, for he found that fever is unfavorable to the appearance of uric acid in the blood. He decides negatively also to his other proposition, determining that all processes which cause the blood to be charged with carbon dioxide, produce uric acid in the blood. This result he charges to a disturbance of the gaseous interchange in the lungs, which causes uric acid to make its appearance in the blood in pneumonia, even in spite of the fever. Its presence in cases of nephritis and anemia is probably due to a defect of red blood corpuscles, which ordinarily secure the further oxidation of uric acid. The uric acid may exist in small quantities in the blood of non-gouty persons, and traces of this substance have been found in apparently healthy blood. Its presence in greatly increased quantities is characteristic. This is a point to be remembered.

Garrod in a paper some years ago describes a test of Pfeiffer, who claimed that the gouty condition of a patient could be readily detected, as follows: "Pass the urine of the patient through a filter charged with crystals of uric acid, the total quantity of uric acid present

being estimated before and after filtration. Pfeiffer maintains that the difference between these two estimates is a measure of the amount of free uric acid present; such free acid being retained by the uric acid filter. The presence of such free uric acid is indicative of the gouty state of the patient. But Roberts has shown that this test does not give the indication which is claimed for it. Acid urines, when passed through the uric acid filter, do leave some of their uric acid upon it, and in some instances this desposition was almost complete, the filtrate throwing down very little more uric acid when treated with hydrochloric acid. When, however, he endeavored to obtain, in this way, evidence of the presence or absence of the gouty state, the results were by no means coherent, for example: in the case of a middle-aged man in perfect health, who had never shown any gouty symptoms, and did not come of a gouty family, the uric tested on four successive days showed on one a highly gouty state, on two others a moderately gouty state, and on the remaining day an absence of gout, showing how misleading the test it."

The uric-acid filter does not really separate it from combined uric acid, for the same urine repeatedly filtered lost progressive quantities of uric acid, so that three filtrations were sufficient to arrest it all. The arrest of the uric acid by the uric-acid filter is possibly due to the instability of the urates, which deposit their uric acid easily, especially in the presence of crystals of that substance. A number of factors renders the results uncertain, such as the degree of the acidity of urine, its richness, uric acid, the speed of filtration, and the quantity of uric acid placed in the filter. A simpler, surer way of testing is as follows: In gouty people there is an exaggerated tendency to premature deposition of uric acid from the urine, and the degree of this exaggeration may be estimated by preserving specimens of the urines of several days (of twenty-four hours) in corked phials in a warm place, as the warmth checks the deposition of amorphous urates, and guarding from fermentation and putrefaction by adding a few drops of chloroform. Should crystals appear in the course of a few hours, regularly, this shows a tendency to gravel, or, the uric acid diathesis; should no uric acid be thrown in the first twelve to twenty-four hours or more, the absence of such tendency is quite probable.

The Collective Investigation Committee of the British Medical Association has studied the causes of death among gouty persons. Bright's disease is apparently three times as important as a cause of death among the rest of the community, at all ages. The effects of gout in the production of heart disease appear to be strongly marked during the period of middle life, but not in the latter years. Apoplexy was quite common in the cases showing gouty diathesis. There appears to be antagonism between gout and phthisis, for only 5.7 per cent. of gouty patients die of phthisis, as against 12.3 per cent. of non-gouty patients. It might be supposed that this apparent antagonism was really due to the fact that the age of greatest liability to phthisis is passed before the age at which gout is commonest is reached; but the relation holds equally good if patients between forty and sixty-five years of age are studied by themselves.

Lancereaux believes that the presence of an excess of uric acid in gouty patients is a secondary and not a primary phenomenon of the disease, being connected with a disturbance of nutrition, which disorder is dependent upon some more general morbid state. Gout is by no means dependent on errors of diet, as the disease develops in persons who have always observed strict care in their habits. Rather Lancereaux considers that the excess of uric acid in the blood is the effect of some disorder of the nervous mechanism controlling nutrition, which data is yet to be secured by future pathologists.

In taking up recent researches in Bright's disease we find that Blum has published an exceedingly valuable paper upon the etiology of Bright's disease, based upon an analysis of 8,500 cases, from Eichhorst's clinic running through a period of five and one-half years, not taking notice of mechanical congestion and amyloid disease. It was found that nephritis occurred more frequently in males than in females (3.309 to 2.74). Of 270 cases of Bright's disease, 140 were acute, 85 being hemorrhagic; these 140 cases of acute Bright's disease showed that 70 per cent. could be traced to acute infectious diseases, while only 2.85 per cent. were traceable to cold, and only 6.42 per cent. classed as of "unknown or uncertain origin." In 873 cases of typhoid fever, Bright's disease occurred in 31 and albuminuria in 143. In 97 cases of scarlet fever, only 4 happened to show the symptoms of Bright's disease, while in 45 cases of measles, one showed renal involvement. In 162 cases of erysipelas, Bright's disease occurred 7 times and simple albuminuria 17 times. Among 481 cases of variola it appeared but once—in a child twelve months old. In 93 cases of diphtheria it occurred but 4 times, and simple albuminuria but 6 times. Of 74 cases of tonsillar angina, 4 cases presented evidence of nephritis, 20 were albuminuric. Among 10 cases of ulcerative endocarditis it occurred once. Out of 360 cases of acute rheumatism, but 4 were affected secondarily by acute Bright's disease. Acute nephritis is not rare in acute pneumonia, occurring in 26 out of 140 cases; it is rather rare in simple acute pleurisy and in simple peritonitis. It was seen rarely with acute miliary tuberculosis; rather common (eight times out of 12 cases) in pyemia. It was met also in connection with chronic tuberculosis and constitutional syphilis. Besides these, a number of less important factors are named as occurring occasionally among the remainder of the acute cases. The severity of the primary disease had little to do with the severity of the nephritis, no especial relation existing.

The mechanism of the urinary secretion was first suggested by Lorenz as follows: "The membrane covering the internal surface of the secretory cells of the kidney may be considered as a true protective organ for the purpose of keeping from the protoplasm of the cells any substances which might interfere with their functions. The structure of this cuticle varies very much, according to the degree of functional activity of the epithelium. In conditions of complete repose, as in the kidney of a bat during the period of hibernation, it is homogeneous; in conditions of activity it is marked by one or more clear streaks through it, and where these are at all numerous the appearance is given of a structure formed of a number of small rods separated by clear, liquid, intermediate substance. Often, too, it is divided into a number of fragments, which look as though they were floated out upon the liquid collected within the cellular protoplasm. After especial functional excitation the membrane seems to be detached and pushed away from the protoplasm by the urine collected within the cell. The products of the renal secretion collect within the epithelial cells in the form of liquid masses, of enlongated or rounded appearance, and clear like the contents of the tubules. This liquid finds its way into the tubules through openings of greater or less size in the limiting membrane." The relation of acute nephritis to the streptococci found in endocarditis,

especially those of experimentally induced bacterial endocarditis is interesting to study, Mannaberg found in 11 cases of acute Bright's disease the urine invariably contained streptococci, which disappeared from the excretion with the disappearance of the symptoms of disease. The patients affected by other maladies and in healthy individuals this micro-organism was not found, although searched for in a long series of samples of urine. Mannaberg has been able to cultivate the streptococcus in question, and to separate it, by peculiarities noted in this cultivation, from other varieties of streptococci. When inoculated into dogs and puppies, even in relatively small quantities, an intense renal inflammation followed. The cocci do not select the kidneys especially, but multiply in the blood and tissues generally; in escaping through the renal structures, they produce their serious consequences. Here is evidently a form of blood-poisoning with especial involvement of the kidneys. The origin of Bright's disease from such causes as exposure to cold and dampness is being more and more restricted, and new etiological factors are being adduced yearly.

The fact that a renal inflammation may arise as from the excretion of bacterial products in the infectious diseases, or from the bacteria themselves, is a natural outcome of the increase of our knowledge of the relation between animal tissues and micro-organisms. Such a micro-organismal factor exerts its most prominent pathological influences upon the kidneys.

Letzerich has been able to reproduce an acute bacillary nephritis from some cases of renal inflammation due to a characteristic bacillus in rabbits. The symptoms are similar to other cases of nephritis, but usually are of a mild form, showing a predominance of the gastric phenomena. He found the spleen swollen, and considerable fever, with an often rapidly-developing edema and effusion into the serous cavities. The urine contains numerous short, straight, or curved rods, demonstrated by taking a bit of the sediment and rubbing it between two cover-glasses, dried in the air, or in contact with an apparatus containing calcium chloride, the drying completed by passing the separated covers through the spirit-flame cautiously, then staining the smeared surface of the cover with a concentrated, watery solution of methyl-blue, and finally mounting the preparation, after drying, in Canada balsam. The affection was met with mostly among children, and, post-mortem section, it was found that the bacilli develop only in the interstitial renal structures.

Cases arising in precisely the same manner are acute Bright's disease occurring in the course of or after the termination of the infectious diseases. Referring to the relative prominence of exposure and the influence of the infectious diseases upon the production of both the acute and chronic forms of renal disease, Vignert says that the tendency even now is to attribute too large a share to cold in the causation of nephritis. The alternations brought about by the micro-organisms in the renal tissue may of course pass away without trace, but, on the other hand, they may become chronic, changing the epithelial elements and interstitial proliferation. Scarlet fever holds the first place among the infectious diseases in this causation; then variola, measles, typhoid fever, and diphtheria. Pneumonia, erysipelas, rheumatism, infectious tonsillitis, and cholera have been mentioned, and one author mentions a case following mumps. Tuberculosis, syphilis, and malaria are also to be placed in the same list. Vignerot refers to a case in which, after scarlet fever, exposure to the least cold produced a decided increase in a scarcely perceptible albuminuria. It seems possible that in the establishment of actual inflammation cold can lower the resistive power of the tissues to the action of the bacteria of these infectious diseases or their products, but could scarcely, by the simple and brief congestion which it induces, reflexly produce a real nephritis.

Fiessinger records the history of an epidemic of scarlatina and of Bright's disease (*Annual of Universal Medicine*). His first observation suggesting epidemicity in Bright's disease included 4 cases occurring in the hamlet of Geovresset, containing 134 inhabitants. In Martignat, a village of about 550 inhabitants, 14 cases were attacked at the same time. In neither of these two villages had the *la grippe* appeared at the time of the nephritic outbreak, and no result from scarlet fever occurred until some time later. From Martignat the disease passed to a village upon a neighboring mountain—Apremont—having an elevation of nine hundred metres. No communication had taken place between the sick at Martignat and those who became affected at Apremont, nor between the latter and the scarlatinous cases which were then present in Oyonnax. Within a period of two months Fiessinger was consulted by 4 persons from Apremont for the relief of symptoms of acute nephritis: a woman forty-seven years of age, a man of forty-four years, another man of thirty years, and a young girl of eighteen years. At the same time and in the same place two other young persons, about eighteen years of age, presented edema of the face, but recovered without treatment. Following the road from Apremont to Oyonnax, between these two villages, is a small hamlet —Geilles. Here a man of fifty years was taken ill with symptoms of Bright's disease, of a rather severe, acute form, at about the same time that it was last seen at Apremont. The man was cured, but, curiously, several months later his little daughter, aged ten years, contracted the same disease. While at Geovresset Bright's disease was apparently unassociated with scarlatina, and so, too, at Martignat, Apremont, and Geilles, there were cases of scarlet fever at places a few kilometres distant—in Oyonnax—where the two diseases were found together. Oyonnax is a town of 4,400 inhabitants, and, as physician to several beneficial societies, Fiessinger was in a position to meet most of the cases of illness in the place. From March to October of 1890 he treated in this locality 18 cases of clear and well marked scarlatina, the source of the primary infection being unrecognized. Of these 18 cases, most of which were among children, 4 became nephritic during their convalescence, cold as a factor being quite eliminated. In 2 of these the children affected with the renal complication were in the same room, and, as an important fact, it may be added that the sister of these children, who had been sent to another village to avoid the scarlatinal contagion, on her return was seized with a nephritis, without presenting any symptoms of scarlatina, from which her sisters were convalescing. Side by side in this town with the clearly-cut cases of scarlet fever were to be met cases of more or less severe forms of angina, a number of cases of Bright's disease, and the class of symptoms designated by Trousseau as pseudo-scarlatinal. As at Martignat, persons of every age were affected among the cases collected, which, having had no eruption upon the skin during the course of the illness, are not looked upon as scarlatinal, the ages of the patients ranging from three and one-half years to sixty-six years. The author points out that, from the statistics he has collected, it appears that the adults are more often the subjects of the nephritic manifestations, while children more frequently manifest the ordinary sympto-

matology of scarlet fever. In all, Fiessinger met in the epidemic which passed over these neighboring towns 42 cases of acute nephritis occurring in persons apparently not affected by the scarlatina and 18 cases of undoubted scarlatina.

The nephritis preceded the scarlatina at Oyonnax and appeared without it at the other towns; the cases of Bright's disease were more numerous than those of scarlatina. Fiessinger regards the two affections as distinct, but subject to the same epidemiologic conditions of origin, which are complete, however, in but a proportion of cases. He concludes that Bright's disease may be epidemic and occur apart from scarlatina; that it may also occur with scarlet fever under the same forms as when epidemic without the latter; that in the same epidemic all the forms of nephritis may occur from the acute to chronic; that between the chronic epidemic form and the common chronic variety there are no differences of symptoms or course; that the epidemic form, when uncared for, is apt to become chronic just as the ordinary acute Bright's disease. It would be quite reasonable to look upon these varied phenomena as the manifestations of the same infection, for in mild epidemics of scarlet fever there are always a number of anomalous cases with no eruption whatever, or an eruption so slight and transient as to easily escape observation, and as the proportion of such anomalous instances seems to follow some unknown influence of place, it seems probable that these cases are really secondary to a scarlatinal infection rather than to a primary infection. Continuing the subject of these secondarily infectious cases of Bright's disease, mention must be made of the instances, occurring in two children in the course of rheumatic purpura, met by Moussous. Both cases were characterized by articular pains, hemorrhages beneath the skin and from the mucous membrane of the alimentary canal, pains in the back, edema, occasional hematuria, continuous albuminuria, and in one the presence of casts, hyaline and epithelial. One child died from asthenia. At section there was found a thickening of the mitral valve, which, probably, antedated the attack. The kidneys were of a yellowish-white appearance, and had the general appearances of the large white kidney, except that they were not much enlarged. Microscopical examination showed that they were the seat of a chronic diffuse nephritis.

Discussing the relationship between this renal condition and acute rheumatism, it is by no means established that purpura rheumatica is of rheumatic origin. The rheumatism may prepare the tissues for the favorable reception of the infectious cause of the purpura, and secondarily of the Bright's disease. Or possibly the hemic alterations due to the rheumatism produced both the hemorrhages and the renal complication.

DISEASES OF DIGESTION IN CHILDREN.

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ONE of the recent advances in the study of stomachic diseases in childhood is the fact that the stomach does not take as important a position in digestion as was formerly supposed. Furthermore, in infants it is not as important even as it is in adults, for the food leaves the stomach quickly, so that a large part of the casein reaches the intestine before being converted into peptones. Under this view the stomach is simply a sort of reservoir through which the milk is allowed to pass slowly into the intestine, therefore the value of pepsin or hydrochloric acid or lactic acid is not as great as it was formerly considered to be, as the food acted upon the stomach is simply the proteids which are changed into peptones, albuminose and acid-albumin. According to Kruger pepsin is found in the stomach not only at birth but as early as the fourth month of the embryo. The fasting stomach has an acid reaction, but after a meal of human milk it is alkaline or neutral, while after cow's milk it is either acid or neutral. Within fifteen minutes after eating the reaction is acid.

Another advance which we have made in recent years is the study of the relationship of the abdominal viscera, and among other things we have learned to inspect the relation of the abdominal viscera in the infant as a possible solution of the causes of digestive diseases.

Wohlmann has demonstrated that in healthy and diseased stomachs, the quantity of hydrochloric acid is increased by irrigations preceding the ingestion of food. In another series of experiments, he demonstrated that the gastric juice secreted between meals may be neutral or acid, and with or without the presence of free acid; therefore, the important point is only the gastric juice secreted during digestion. In healthy breast-fed infants he showed free acid quantitatively and qualitatively from one and one-fourth to two hours after feeding, the maximum amount being from 0.08 per cent. to 0.18 per cent. He could not find in acute and chronic dyspepsia and gastro-enteritis free acid within two hours, unless the amount taken was below the usual for the child. He found that in acute dyspepsia, irrigation rapidly increased the quantity of hydrochloric acid, while he could not find in chronic dyspepsia free acid during the entire period of digestion of breast milk. Wohlmann also determined that in infants suffering from gastro-enteritis litmus-paper showed only a faintly acid reaction after two hours; proving that the quantity of acid secreted during this disease is small.

The importance of this demonstration is shown in a series of experiments upon premature infants. Wohlmann found that when they were nursed at intervals of two hours the quantity of secreted acid never was sufficient for quantitative tests. If the nursing intervals were three hours long these infants, like full-term children who suffered from dyspepsia, needed longer time to secrete free hydrochloric acid, consequently Wohlmann advises on account of this slowness of digestion in premature infants, that the intervals of feeding should not be shorter than about three hours.

Smaller amounts of food now generally advised for each feeding, for extensive observations have been reported, showing that approximately, at birth, three, six, nine, and fourteen months, the capacity of the stomach is, respectively, 1, 4½, 6, and 9 ounces.

Unfortunately cases of malnutrition are only too common in daily practice, but a physician must be careful not to make a diagnosis too quickly if simple malnutrition, for back of this condition may be inherited tendencies, or in the child itself there may be organic disease. It is well not to be in too much of a hurry to make a diagnosis, watching a case if need be for weeks. The all important point is to discover the cause; when this is correctly done, the battle is half won. First, it is well to study the anatomical peculiarities of the child. The great size of the liver accounts for many peculiarities in the abdominal viscera of the infant, for the stomach is comparatively small and crowded to the left by the liver, partly covering it. The fundus is smaller than in the adult, yet it does not account for the ease with which a child vomits. This is due perhaps, to the fact that the stomach, surrounded by hard, resisting organs, is closely confined. The small

intestine shows no peculiarity in its relations, being usually about nine feet in length at birth, increasing rapidly during the first two months of life. The cecum varies in its position, while the transverse colon is crowded out by the liver. The sigmoid flexure lies to the right of the median line, extending downward into the pelvis behind the bladder, which in infancy is an abdominal organ. The relations of the kidneys, spleen, and pancreas are the same as in the adult's abdomen. Stomach dilatation may be due to mechanical causes, such as congenital stenosis of the pylorus and overfeeding, or to muscular atony, from scrofula, syphilis, rachitis, or malaria. Abnormal fermentation occurring in acute or chronic gastro-intestinal catarrh is a common cause. Congenital stenosis of the pylorus are reported, four cases occurring in the same family. They are reported by Holt and Crandall. "The first was a classical case, dying at two years, the diagnosis being verified by an autopsy. The second case died at seven months, with very similar symptoms, but no autopsy was made. The third child showed the same symptoms, but improved under irrigation and careful diet, so that at the age of twenty-five months, although rachitic, he was in a very fair condition. The fourth died of tuberculosis at five and a half months; the autopsy revealed a collapse, 'hour-glass' stomach. The only case which came under observation, depending apparently upon congenital syphilis, gave no gastric symptoms during life, although the autopsy showed great dilatation, the lower border of the stomach reaching to the umbilicus, the mucous membrane being anemic and atrophic."

The statement is undoubtedly true that by far the largest number of cases of dilatation of the stomach are due to abnormal fermentation. When due to congenital stenosis the vomiting is persistent, while constipation or flatulence and progressive emaciation are followed by death, from starvation. Overfeeding or constitutional causes show slower symptoms, beginning with slight disturbance of digestion, occasional vomiting and loss of appetite, until finally nothing can be kept on the stomach. Chronic indigestion sets in, the child usually dying from some acute attack of gastro-enteritis. When fermentation is the cause the local symptoms are frequently obscured by the more severe symptoms of the original disease. The most characteristic physical sign is the tympanitic percussion note in determining the outline.

The prognosis in dilatation of the stomach depends largely upon the cause, and the possibility of its removal when due to pyloric stenosis it is, of course, bad. Rely primarily upon carefully regulated diet, avoiding starchy foods, in particular, and using daily irrigation of the stomach with warm water or weak solutions of boracic acid or benzoate of soda. This removes and corrects the fermentative processes. Germs will grow only under circumstances favorable to their existence, the best media being an undigested decomposing mass in the stomach and bowels. Hence indigestible food or overfeeding leaves an indigested mass in the alimentary tract and predisposes to cholera infantum. This germ theory has made our present treatment more exact, but it must not lead us astray, outside of administering drugs and excluding germs, there is still the necessity of giving attention to general dietetic and hygienic measures for the children. For example, Hue found that during a severe epidemic of cholera infantum, no breast-fed child was ill, the victims all being fed on cows' milk, from two healthy cows. Every precaution had been taken, yet the disease, beginning from one to four days after birth, was very fatal in its character. The milk had been boiled, without influence upon the epidemic. Subsequently it was sterilized and the ward thoroughly cleaned, the walls being washed down. The epidemic quickly disappeared. Saint Philippe suggests another cause, calling attention to the relationship between the intestinal canal and the skin, believing that prolonged baths at too low temperature may be the cause of digestive disturbances in young children.

Quantitative bacteriological investigations upon the stomachs of living children estimating the relative number of bacteria present in health and disease have been made by Seiffert to determine whether relationship exists between the quantity of organisms present and the degree of severity of the disease; also whether there was any relation between numbers and severity on the one side, and the factors determining decomposition of milk on the other. The following conclusions are presented: (1) "The spores present in acute dyspepsia and introduced with the food will grow luxuriantly at the body temperature, and these are capable of withstanding the action of the acids of the stomach; (2) since severe dyspepsias, especially of the cholera-infantum type, present the phenomena of acute intoxication, and increase in severity with the temperature of the atmosphere, their cause is to be sought in the poisons generated by the saprophytic germs of the stomach and intestines; (3) some of these cases have the general characteristics of acute infectious diseases in their etiology, but the majority are not particularly endemic or epidemic, and the special characteristics of infectious diseases are rare."

There seems to be a reaction on the part of physicians in regard to their ability to feed weak and delicate children. Theoretically, the difficulties seem to be largely overcome. Nowadays we can prepare a food that, chemically, seems to be almost identical with breast milk, with the result that sometimes it acts admirably, at other times it is utterly rejected. A part of the failures may be due to changes in milk during the process of sterilizing. Sterilized milk is not as readily digested as plain milk; it possesses some disadvantages, not, however, as great as the disadvantages of milk swarming with bacteria. Undoubtedly partial sterilizing is sufficient as a rule. When the Arnold sterilizer is used continue the process only twelve or fifteen minutes, placing cold water in the pan at first. According to the researches of Leeds and Hiesland, the following changes occur in sterilized milk: "1. When the heat rises above 165° F. the galactozymose, or starch-liquefying ferment, is destroyed. It is present in cows' milk only in minute quantities. 2. A portion of the lactalbumin is coagulated. 3. The casein, after the action of prolonged heat, is less readily coagulated by rennet, and yields slowly and imperfectly to the action of pepsin and pancreatin. 4. Fat is so affected by the heat that, after the milk has stood for some time, small lumps collect on the surface. 5. Milk-sugar is completely destroyed by prolonged heating." Soxhlet has recommended changes in the sterilizer—he proposes to do away with stoppers, substituting for them thin sheets of rubber to be placed over the bottles, permitting the exit of gas set free during heating; while cooling, the rubber is retained in position by the atmospheric pressure. Sterilized milk is not yet the ideal food, for in some cases fat is so emulsified by sterilization that the milk becomes less digestible.

It must be remembered that sterilizing accomplishes only the destruction of bacteria—it does not render the milk more digestible. When absolutely fresh milk can be obtained, it is not needed. Care must be taken in the handling and transporting of milk. It should be car-

ried in full vessels, in order to prevent any churning action, and should be kept shielded from the air. The use of milk in the more active stages of diarrhea is disapproved nowadays by most writers. In fact, in the first stages, especially where the onset is sudden and severe, no food whatever is needed for many hours. Water may be administered freely, or weak brandy and water, chicken-broth, or barley-water. When milk is given it should be largely diluted, 1 part being used to 8 of water, the strength being gradually increased. Cream, well diluted, is frequently borne better by the stomach than milk. Meat-broths, thin soups, meat-juice, and white of egg are indicated when other foods fail.

The tendency increases in the profession toward the use of fewer drugs and smaller doses in children's diseases. The use of the disinfectant drugs simply as disinfectants is decreasing. Bismuth subnitrate is popular, possibly more so than any other drug, large doses being employed, even 10 grains being given every two hours at one year. The salicylate of bismuth is not especially valuable. Arsenite of copper has been used, although the experience of most observers has not been especially fortunate. Carbolic acid, resorcin, and naphthalin are rather in bad repute. Bichloride of mercury is used, but less than a few years ago.

In dyspeptic diarrhea and acute enterocolitis, at the outset, even if the case is first seen after several days of illness, an evacuant is usually given. Rhubarb, a saline laxative, castor-oil, or, more commonly, calomel is employed, either at a single dose, or in divided doses, frequently repeated. By the latter method $^1/_{10}$ or $^1/_6$ grain is given every half hour or every hour until 1 grain has been used. Thoroughly triturated with sugar-of-milk and administered dry on the tongue, either as powder or compressed tablet, it will be retained and act efficiently when the stomach is too irritable to tolerate any other drug. Bismuth, acids, alkalies, and possibly antiseptics should follow.

Opium is used by some writers, and, when given carefully, is an agent of the greatest value. It should not be used until decomposing matter has been removed from the alimentary canal. When the passages are small, infrequent, and in bad odor, it is decidedly contraindicated, and it should not be pushed to narcotism in any case. Remember children take relatively small doses. It should never be combined with the ordinary diarrhea mixtures, but should be administered alone as needed. Saint-Philippe has denounced the use of opium, even in small doses, and believes its effects are far worse than those of the diarrhea, while other pediatric specialists have written against it. Other writers, however, who have used opium with proper discrimination, do not share these views. Salol has been commended by Moncorvo in the diarrhea of marasmic children.

Verdalle has obtained excellent results from lactic acid in green diarrhea, while Saint-Philippe has found it, on the whole, uncertain and unreliable. Venot insists that its use should be restricted wholly to green diarrhea, while Lefour insists, with equal positiveness, that the color is not a guide. Thomas favors the drug in green diarrhea, and also in gastric dyspepsia without fever, characterized by vomiting, flatulence, and yellowish, fetid stools, containing undigested curds. The difficulty occurring to most physicians who have used the acid is the vomiting and the coagulation of the milk into solid curds, especially if it is given immediately after meals. The use of antipyretics for children has few advocates nowadays. A prolonged temperature, ranging so high as to demand antipyretic treatment, is met with in but a small portion of cases. Reduction of temperature by sponging and by removal of decomposing matter from the intestinal tract, and the prevention of further decomposing by irrigation, is more sensible than the use of antipyretic drugs. Harrington has reported favorably of acetanilid, in doses of 2 to 4 grains for children from one to two years of age, repeated every four hours, combined with whisky, but its use is doubtful.

Arsenic is indicated if the passages are large and greenish. Wilson has suggested for hemorrhages and bloody passages oil of turpentine. He gives it with opium, and sometimes with bismuth. Sulphocarbolate of zinc is recommended by Stewart, in doses ranging from ¼ grain to 4 or 5 grains. A non-irritant, crystalline, astringent salt, it may be combined with bismuth and pepsin, acting as an intestinal antiseptic, sedative to the stomach, antispasmodic, and astringent. Luff considers the milk-ptomaine "tyrotoxicon" as the chief factor in diarrhea of childhood, and, in biniodide of mercury, he considers he has a drug which renders the ptomaine insoluble and inert, with these advantages: "(*a*) Precipitation of tyrotoxicon, by forming an insoluble double iodide (bichloride of mercury is powerless to precipitate the milk-ptomaine); (*b*) the biniodide is a much more powerful antiseptic than the bichloride; (*c*) it is a safer drug than the bichloride, and is more rapidly eliminated from the system. He prescribes it in the following form:

"℞ Liq. hydrag. perchlor. ..... 12 minims.
Potassii iodidi ..... ¾ grain.
Chloral hydratis ..... 1 grain.
Aquam ..... ad. 1 drachm."

He gives a teaspoonful of this for infants up to six months of age, every four hours, and for infants from six to twelve months of age every three hours. Children more than one year old may take two-teaspoonful doses. Every teaspoonful of the mixture contains $^1/_{50}$ of a grain of biniodide of mercury. He has employed it now in 80 cases. In 72 of the 80 cases the diarrhea stopped within two or three days; in no case did it last over seven days. Creosote is used in vomiting by Harrington in ⅛ of a drop every thirty minutes, in water or elixir of pepsin. Wilson triturates the creosote with bismuth and sugar of milk. He also recommends carbolic acid and lime-water as a most soothing combination, checking vomiting when there is fermentation of food. Fowler's solution has been tried in vomiting with profuse watery diarrhea, the dose given being carefully regulated.

The value of stomach washing and irrigation of the colon is too well known to allow them to fall into disuse. Troizky lays down the following points: "As a prophylactic measure, stomach-washing is useful in functional disturbances of stomach and intestines. The object is two-fold: to remove the irritating contents, and to act as a stimulus to the gastric secretions. For these purposes plain water, used just before feeding, is sufficient. The irrigation may, however, be made with alkaline or acid solution, according to the conditions to be overcome in the individual cases. In inflammatory diseases of the stomach the severity of the onset can be diminished, but in later stages and in chronic cases this measure cannot be said to be curative."

The colic to which young infants are so subject is often neuralgic in character, coming from altered secretions of the intestinal canal, producing rapid formation of gas. The attacks are apt to recur at regular intervals, sudden in onset, and continue for variable periods. The pain is often extreme. The bowels may be consti-

pated, but more frequently they are loose. It is well to avoid stimulants and opiates, and if the attacks are neuralgic in character cinchona is a valuable remedy. Lactopeptine and subnitrate of bismuth, 1 grain each, placed dry upon the tongue every hour until the child is quiet, has been tried with excellent results. Treatment should be kept up for several days.

HYDROTHERAPY AND NUX VOMICA IN CHRONIC GASTRITIS.

BY A. C. GRIGGS, M.D., PHILADELPHIA.

THE following patient, who has improved wonderfully and is now in a very satisfactory condition, will serve as an illustration for my ideas on the treatment of this most stubborn condition. This young man has gained ten pounds in weight and has improved in every respect. He has no pain and no distress in the stomach, either before or after meals, although he complains still somewhat of a sense of heaviness about the abdomen. He is able to be up and around his room during the afternoons. We have been giving him a bath in the morning at a temperature of 85° F., followed by a cold douche and thorough rubbing. His pulse under this treatment has increased in volume, and the tension is better, but there is no increase in frequency. There are no deleterious effects from the bathing. There is a good reaction which is explained by the healthy glow of the skin after the bath. This then is in addition to the fact that the drugs we were giving have been effectual. The increasing of the dose of the tincture of nux vomica from 15 gtt. to 40 gtt. does not make it a very large dose. There is no other preparation that I find so good as this, in a condition of asthenia. It is a very good remedy in other conditions; it matters not what the diagnosis is, and in this case we have proven this point, in that he is still gaining in weight and gaining in strength, and, while to all intents and purposes it is possible he may improve to a wonderful degree, there remain evidences of secretion of acid, and there may be a lessened amount of hydrochloric acid for a time yet; and unless we take precautionary measures that will be one of the last things to improve.

Whatever the condition may be, the point is, we have to attend to the general condition and health of the individual. It is as important in managing a case of catarrh of the stomach; also a sluggish condition, or any low nutritional condition in any of the organs or structures of the body. If the patient is a rapid eater and eats improper food, for this reason he would very likely have chronic gastritis. Poor food in general, not nourishing food, and bad hygienic surroundings in general, overwork—it is in these cases that tincture of nux vomica is useful. I do not say it is poisonous, but I do say we get along better in the administration of nux vomica and iron when we have to do with these chronic cases, it matters not where they are. As an illustration, take a case of rheumatoid arthritis, weak heart, weak pulse, rapid, which is not unusual in a case of rheumatoid arthritis; great wasting, too, and poor digestion in general—all the functions were below par. She was in a condition out of which she had to be lifted, from a lower plane of health to a higher plane of living. Hydrotherapy, rest, proper food, and the administration of as much as two or three drugs, were needed apparently to control the nutrition and stimulate the blood. It probably acts through the cerebro-spinal system. She had to take 90 gtt. of the tincture of iron three times a day, probably, and she improved wonderfully in every respect, gaining thirty-five pounds. Her nutrition improved; the joint process ceased. In the case of drugs, I want to say, give nux vomica in cases of rheumatoid arthritis; give it in such general impaired states of nutrition, and because this was merely a wasting, she improved. Rely upon nux vomica not because it has a specific effect, but because of muscular weakness. Give increasing doses of nux vomica; there are two or three men in this city who are doing the best work, who rely upon this method of giving nux vomica, in ascending doses.

You need not be afraid you will do any harm, if you give small doses and then gradually increase it. Of course watch for the physiological effect. I usually find a slight vertigo, light head, or a waving feeling in my head. I usually increase the medicine 3 or 5 drops every three days. When the physiological effect is produced, I decrease it or stop it altogether for a day or two or three. Some persons will be susceptible to the action of strychnia or nux vomica, and in those perhaps when 15 or 20 drops is secured, that dose will be considered as sufficient. Patients soon become accustomed to this drug, and if increased for two or three weeks, and then stop for several days, and then begin increasing it again, and in that manner only by pushing it along from time to time, you can get these effects that you cannot get from other drugs. Dr. Putnam has been using it in ascending doses in these neurasthenic cases. There is no one drug out of which he does not get more good than nux vomica in this manner. It is the same with iron. You can get an immense amount of good by giving doses of iron, in the form of three Blaud's pills three times a day. You can possibly do no harm. The chlorosis may be present, and the hemaglobin has rapidly improved. The iron stimulates the organic processes too. Will get good results from the use of stiff bracing doses of iron.

Now with a general treatment this boy has improved. His stomach is down; still somewhat distended. Pain in the stomach over the abdomen; sense of fulness over the umbilicus; feels heavy along the edge of the stomach, usually the lower border. A bandage may relieve him. It is wonderful what relief in cases of dilatation and gastritis can be obtained from the use of external abdominal bandage. I suppose five times a week I order for patients in private practice bandages. There is no benefit to be gained by using them in a haphazard way. This patient has a flat abdomen; hardly higher than the ilium; hence a bandage that would not go around would not be a support; it must be a bandage that will support by properly applied pads. If the kidney is movable, bandage below the border of the kidney. If there is simply a dropping of the stomach then I have the ordinary abdominal bandage made with a pad about three inches wide and four inches across, fitting the lower half of the bandage, putting it across about the level of the umbilicus. A patient took an extraordinary abdominal bandage which we partly rigged up, and he did the rest. Instead of hanging down, his stomach hung up about six inches. Have the bandage made with the patient lying down with an inflated stomach; then if there is comfort, for we judge simply by the comfort of the patient, if there is any comfort, you may be sure the pad is in the right position. In some cases there has been previous gall-stones, in which the duodenum is hitched to the gall-bladder, and secondary dilatation together with pyloric obstruction occur in the person in whom there is a hitch or holding up of the duodenum, may be a cause of myasthenia.

These cases can be improved by pads, by abdominal supports to an unusual degree. Of course, operation is the thing if the patient will submit to it. There is danger of localized peritonitis. Under these circumstances, the pad is better than to resort to operation, because patients do not do very well. Get up their nutrition first to a high pitch, then operative interference is more satisfactory. They do badly. This young man, before he goes home, we will order a bandage, and will have it so padded that it will support this abdomen. Sometimes the pads alone will answer, after being fed. In other cases it is well to run a band from here around and below, up the lower part of the bandage. Padding is not enough, but, following the German method, they have their band hitched to the lower part and tied up behind, and that gives the abdominal support very well. In persons who have large abdomens, as in women after repeated pregnancy, there is no necessity for bandage. We usually get enough support from the bandage alone, plus the body which is falling in. It is wonderful what you can get in these cases by putting on well-adjusted abdominal bandages. Two reported to me this morning of the wonderful relief they had experienced; one a man from down town who had been suffering from pain there, right in the region of the pylorus, for hours. After removing the stomach contents, I found he had marked dilatation of the stomach, and that that dilatation was only probably due to relative pyloric obstruction. Chronic gastritis was kept up, and all the symptoms of dyspepsia were going on; the pain was due to the difficulty of getting the food through the pylorus. I saw him first in June, and have seen him different times since then. He has grown in flesh and in weight, and since that he has been relieved entirely of pain by the use of this abdominal pad. Sometimes we have to go over every case, in fitting one who has a thin body, which had adjusted a pad, and in some way changed it about. In this boy I have used diluted hydrochloric acid. Another dyspeptic measure. Hydrotherapy, rest, carefully adjusted diet, and with it tincture of nux vomica. One thing that is important to bear in mind is to see that the patient has that rest after each meal; have him lie down after a meal, and, of course, not allow him to eat too much; never allow much fluid after taking food. Half an hour after meals the stomach is in a more comfortable position, and during this time the act of digestion can be carried on more readily, and during this time when the stomach is empty it will be much easier than if allowed to go about at once. It is gratifying to see a person improve as much as this patient has improved; without the use of creosote, carbolic acid, and all the mixtures that are used.

In the treatment of this chronic gastritis with retention, fermentation, the occurrence of flatulence, I would have them to use as small a list of drugs as possible. In 90 per cent., or probably 95 per cent., of the cases of chronic gastritis, gastric dilatation, who are weak and run down as this boy was, you will find a subacid condition of the stomach. In nearly all such cases, you can see for yourself, there is dilatation, there is probably moving kidney; neurasthenic as this boy was, probably hypochondriacal, under weight, you can nearly always say sub acid; and the only drug that is of any service is dilute hydrochloric acid, and the best way to give it is with the meals. Give it in generous doses, 15 or 20 gtt. Some of our New York friends give 40 gtt. Simple drugs to stimulate the gastric secretion; not many; strychnia, and perhaps nux vomica; but we must be sure to get our acid back, good normal acid, by building up the general health; rely upon the replacing of the wanted acid. Now cases of hyperacidity usually do not have neurasthenia; they are generally very stout persons. They have good muscle tone in the stomach; no need of such aid. In these cases of hyperacidity we have drugs too that meet the occasion almost at once; as the nitrate of silver, extract of belladonna, salts of strontium. With the hypochondriasis they are often nervous, and hence bromides are generally indicated. But they increase the hyperacidity. Certainly this therapeutic fact you can put down, that in cases of hyperacidity bromides have an effect upon increased amounts of secretion. Food stimulates a vigorous secretion; then, too, the treatment does this class of patients a great deal of good, and based upon the result of gastric analysis, increase the subacidity or hyperacidity by the remedies I have mentioned. Some drugs lessen the amount of fermentation, the accumulation of gas, and probably better do this by administering your remedies an hour or two hours after eating, just at the time when the food is boiling most vigorously. Charcoal, bismuth, creosote, ¼ gtt. or 1½ gtt. bicarbonate of soda, given two hours after meals, will check the fermentation process.

Sulpho-carbolate of soda is a good drug; bismuth, another drug very good; and then with these a drug that will aid digestion, as diastase, grs. v., aid the digestion of meat. I have used less and less of pepsin; one grain has about the same effect as ten grains. I am not using pepsin very much. Of course, you must remember that there is an acid due to an excess of combined acids. Here we have a difficult condition to treat. If the people are weak and debilitated, then give alkalies, and in full doses, magnesia carbonate, Phillips' Milk of Magnesia, or some other alkali, ammonia carbonate will also be of use combined with bismuth, charcoal, usually relieve the acidity which the patients say goes on at all times; at 2 o'clock in the morning; in the middle of the afternoon; in the morning towards luncheon, in the afternoon; large doses of magnesia or chalk instead of charcoal; or any drug, as benzo-naphthol, a splendid preparation. The one thing which will bother you as much as anything else is the constipation which occurs in all these cases. Use all purgatives which will act upon the system. Belladonna always does harm in the way people generally take it. It is harmful because of its effects. A dose of belladonna will do a great deal of harm when improperly used. There is nothing more difficult to handle than constipation. I generally combine with the remedies I have been giving rhubard before meals, with subnitrate of bismuth, which is excellent; given in powder it is fine; aromatic powder of rhubarb; it is as harmless as any drug that can be administered; it is the one drug which, if you will learn how to handle it that is more useful than any other that I have named. Avoid new drugs. Take a few drugs and learn how to handle them, and you will get your patients well, if you have first established confidence by making a correct diagnosis.

—Judge Samuel Greene, of the Criminal Court at Birmingham, Ala., has decided that osteopathy is the practice of medicine, and that any person engaging in the same in Alabama can be forced to procure a license for practising medicine. His decision was based on the dictionary definition of the word "medicine," which is: "Science which relates to the cure, prevention or alleviation of disease." The defendant claimed that osteopathy was not the practice of medicine, as no drugs were used.

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Every noble work is at first "Impossible." In very truth, for every noble work the possibilities will lie diffused through Immensity; inarticulate, undiscoverable except to faith.—CARLYLE.

THE TUBERCULOSIS PROBLEM.

THE subject of pulmonary tuberculosis is exciting the highest attention of the medical profession as well as many outside of it the world over. Its numerous bearings are being studied by all classes of scientists, for the purpose of solving the various ramifications of its subtle influences.

The third annual session of the American Congress of Tuberculosis will convene in this city June 2d to 4th, when the subject will receive a good overhauling from many points of attack.

The Governors of many States, who are honorary vice-presidents of the Congress, have appointed men of standing as delegates, and a respectable contingent is expected from foreign countries.

There will be, aside from all papers of a miscellaneous nature, four symposiums, arranged each to occupy one session of the body, *viz.*, "Preventive Legislation, Embracing the Social, Municipal, and State Aspects of Tuberculosis;" "Tuberculosis in Its Pathological and Bacteriological Aspects;" "The Medical and Surgical Aspects of Tuberculosis," and "The Veterinary Aspects of Tuberculosis."

These will each be in charge of a committee who will arrange for the opening papers and for those who will participate.

The great feature of the London Congress last year was its museum, and as we have in our country material for such a museum, it is hoped that the profession will coöperate with the committee in organizing this important department. The catalogue of the museum of the London Congress occupied 200 pages of printed matter, and embraced drawings, maps, skiographs, photographs, engravings, charts, prints and contributions, besides specimens, and illustrations of microscopic and biological work relating in any way to the subject.

It is hoped that the laboratories of the Boards of Health of the cities and States of the Union and the medical colleges and schools will loan specimens of their work to this collection, and that the microscopists and students of biology, pathology and chemistry will enroll and coöperate in this laudable movement to extend the knowledge of the results attained by scientific endeavor in the great work of combating the spread of this great destroyer of mankind, Tuberculosis.

Tuberculosis hospitals for the poor are springing up at many important points, and those able to pay can have the choice of a large number of well-equipped sanatoria, with environment to suit. The Infirmary on Blackwell's Island, established less than three months since, already makes an excellent showing in another column, as to improvement and recovery in a class of patients where little could be expected.

The consensus of opinion seems to favor the sanatorium or the hospital for this class of cases, for many reasons, the chief of which is its communicability.

That pulmonary tuberculosis can be cured in many instances, no physician of experience will question, and as to how it can be done with the greatest number is the all-absorbing question of the hour. The first point is to stop the source of contagion, the second, to fortify the individual against the micro-organism, and we shall succeed in stamping out the dread disease, just in proportion as we are able to accomplish these points.

The transmission of the disease by contact is considered now to be infrequent, and the danger of contagion is charged to the dried sputum in the atmosphere, a condition which should be prevented.

As all persons who are exposed to the contagion do not contract the disease, it goes without saying that a congenial soil is necessary to its development. If an antitoxin has been found that will do in this disease what has been done in some others, as is claimed, a great advance has certainly been made in prophylaxis as well as in cure.

It is a curious fact that the discovery of the tubercle bacillus by Koch did not draw any especial attention to the infectious character of the expectoration. Indeed, up to within the last five years this subject was treated with contempt by the medical profession and the public. Now, however, the subject has grown of more importance, until to-day the public have become well impressed with the necessity of care with regard to expectoration. But when it comes to the details of a consumptive, it is somewhat difficult to decide exactly what he is to do. We cannot demand that he will carry around with him a sputum cup or bottle, or that he shall use paper napkins which he will burn from time to time. In fact, it is quite difficult to disinfect or even to cleanse properly a sputum cup or bottle, and its use is unpleasant both to the patient and those around him. Knopf has devised a flask which can be used by ambulant pa-

tients, but which requires the use of both hands, which, naturally, attracts attention to him both at home and abroad. Cobb, in a recent number of the *Philadelphia Medical Journal*, has described a cup which can be carried in one's handkerchief, for this purpose. It consists simply of a cup into which is fastened a funnel in such a way that if turned upside down it will not spill, for the major diameter of the flask bears such a relation to the minor diameter that the surface of the liquid will not rise above the mouth of the tube in any position in which the flask may be placed. The patient can conceal this in his handkerchief, and as there is no mechanism to get out of order it can be used easily without attracting attention. The proper way to sterilize it is to simply boil the bottle in an old can. The handkerchief can be folded around the bottle and retained in position by a rubber band around its neck. Cobb states that he has seen patients use it at parties and in the presence of others, and was never able to tell himself whether the patient was using the handkerchief alone or the bottle with it. In this way the patient is able to maintain his self-respect and is not obliged to shock constantly his morbid sensitiveness. It is more convenient than any other form of cup, and, Cobb believes, goes far towards solving the knotty problem of caring for the sputum. It is, of course, necessary that the handkerchief should be sterilized at the same time as the cup. He does not believe in the use of any disinfectants, thinking that it is better to depend on boiling alone. In this way it is possible to induce the consumptive in public to use an effective and intelligent method of destroying the tubercle bacilli which he casts off.

The rational treatment of pulmonary tuberculosis demands all the resources at our command, because of its deep-seated and insidious character. It is absolutely necessary that the quality of the atmosphere, the environment, and the rules of hygiene and diet should be thoroughly considered, if we would do our best. The treatment in every respect demands the most rigid individualization. It is useless to attempt to treat every case alike in any respect. Malnutrition being the very foundation of the disease, no effort will avail which does not remove this cause! We should not forget that what is one person's meat is another's poison.

Recovery has been accomplished in some instances with so little difficulty that there is danger that the idea may prevail that it is a simple matter to treat such patients, which is not the case, and harm will ensue if it is so considered.

THE RESPONSIBILITY OF A PHYSICIAN.

THERE is no branch of work that has depending upon it a greater degree of responsibility than that of the physician. Even in the smallest of cases and the most trifling of conditions the physician must exercise a great deal of care, and, unfortunately, this care is not necessarily in proportion to his experience, nor can it be made so. The most complicated case of labor that a physician may ever have, may be his first one; the most annoying case of eczema may be his earliest experience with that disease.

The tendency has been, in the last few years, for the law to lighten, to a certain extent, the responsibility placed upon the physician, especially in such aspects as affect his medico-legal standing. The law is disposed to be very lenient in such cases as where a reputable physician has thought it necessary to produce abortion. Here a physician's standing and his judgment in the matter have the greatest weight. So it is in the liability of a physician in signing a certificate of insanity. It is required by the laws of most of the States that no person can be sent to a hospital for the insane without a personal examination made by two or more physicians, each of whom must concur in the certificate. The law of personal liberty has been made so strong in this country that the physicians are not allowed to force a man to a hospital unless he is insane. Morphine eaters and alcohol victims can insist upon being released and dire punishment awaits the superintendent who endeavors to hold such men under his control. The ancient horror of being committed to hospitals intensified by Charles Reade, the great novelist of fifty years ago, has left its impress upon our laws and no Anglo-Saxon law will step in nowadays and protect a man from himself.

Of course, the liability which a physician assumes in signing a certificate of insanity is the possibility that the certificate may be wrong. A physician who makes such examinations for criminal or dishonest purposes is not, and should not, be protected from the consequences, but if the certificate turns out to be false in fact, the question arises as to the extent of his civil liability. It is claimed on the one hand that he is acting in a judicial capacity, and so long as he proceeds with caution and to the best of his understanding, he is not liable. On the other hand, the opponents of this idea claim that he is simply called in his professional capacity as a physician and is therefore responsible for his want of care or prudence in making the diagnosis. Loyd, in a recent number of the *Philadelphia Medical Journal* has taken up this question and gives it as his opinion that this latter view is the one most generally accepted by the courts of this country, although he acknowledges that the reported cases are few in number. It has been the habit of the courts to apply to these cases the ordinary rules as they are applied to malpractice, which is that physicians and surgeons, by holding themselves up to the world as such, impliedly contract that they possess the ordinary and reasonable qualifications for this profession and are under obligation to exercise reasonable and ordinary care, skill and diligence. This is the whole question of their liability, for they are not expected to have extraordinary or remarkable experience or skill. The discussion of this question extends backwards over a period of fifty years, a leading case being that of an Englishman who died in 1862. In it the defendant was a physician who had signed a certificate of the plaintiff's

insanity upon statements made to him by the wife of the patient. He saw the patient himself only for a few moments and signed the certificate on these hasty data. The man was subsequently declared sane. The judge charged the jury on the question whether the physician, under the circumstances, had made an exercise of the greatest possible care, and the jury brought in a verdict of damages for the plaintiff on the ground of negligence and want of reasonable care. There has been a series of conflicting decisions rendered recently by the Supreme Court of Massachusetts, which has special laws on the subject, and in cases in New York State Courts which show that the subject is, as are many legal ones, somewhat in doubt.

Therefore, it is well that the physician should proceed in these matters with great caution, and especially should not be misled by the assurances of relatives to yield personal examination of patients. He should keep well informed as to the local lunacy laws and follow them carefully. Yet, on the other hand, his views should not be dimmed by the possibility of damage suits looming up in the future.

THE EMOTIONS CONSIDERED MEDICALLY.

IT is surprising how little is known of the relation between disease and the emotions. This meagerness of material is all the more remarkable when we consider the remarkable study of the emotions on the part of the present school of realistic novelists. It would seem as if the study of medicine would be an excellent preparation for the profession of novelist, but certainly, along the line of the motions, excepting what a physician gleans from his individual practice, it is rather barren.

As Lee has pointed out in a recent address upon the subject of the emotional brain, the death or the ablation of the emotions is graphically described by Du Maurier in "Trilby" when "Little Billee," one of the prominent characters of the story, describes a sickness from which he recovers fully but seems to have lost his feeling entirely. He marvels at the fact that he seems to have no love or affection for any one, that nothing seems to please him, that all the adulation of the world of fashion does not impress his sensibility.

According to Lee, the emotional brain is placed in the solar plexus. He shows that old anatomists had a great appreciation of its importance by naming it the "solar plexus," for it is the light of the human system, spreading warmth and joy to its remotest parts. This stands in contradistinction to the brain, or, as we may say, the "rational brain." It has long been known, as recorded by Abernethy, that no one lives happily who has disease below the diaphragm, while the hopeful character of patients with disease above the diaphragm has been well marked. This can be explained by the fact that any suspicion of disease of the liver, etc., has a depressing effect directly upon the solar plexus and the markedly depressing effects of epidemic influenza can be seen in its effect upon the solar plexus explaining in this way the profound depression which is so constantly present.

The anatomists have paid but little attention to the solar plexus, while the physiologists have passed it over entirely. In its pathology, as in its therapy, but little has been known. It seems to be stimulated by alcohol and all the nerve tonics, especially nux vomica and its various preparations. Light, heat, electricity and motion all affect it, reached through the terminal sensory nerve filaments. The application of heat, either in the form of hot douche or hot water bag, or the use of cold, either in the cold douche or ice bag, have a great effect upon the condition of the patients. Electricity has been employed, faradization generally and galvanization locally. If one pole is placed over the epigastrium and the other on either side of the spine below the tenth rib, or if one is placed on the neck below the angle of the jaw, and the other alternately at the epigastrium and over the former points in the back, excellent results can be obtained.

It is a well-known fact that motion, when given in the form of the so-called "Swedish Movements" or massage, will produce good results. Out-door exercise, especially in the saddle, has obtained good results, but, undoubtedly, it is rather due to the vibrations which these motions produce upon the capillaries and fibres of the central solar plexus. Undoubtedly a future source of advancement is in the study of this great abdominal or emotional brain.

THE ALCOHOL PROBLEM IN THE PUBLIC SCHOOLS.

THE question of the food-value of alcohol has come quite prominently into discussion lately, in connection with the teaching of "Alcohol Physiology" in the public schools. Professor Atwater of Wesleyan University, has been especially emphatic in upholding his well-known theory on this subject, and in denouncing the "officially approved" text-books on physiology used in many schools. At a recent meeting of the New York State Science Teachers' Association, he declared that "unfortunately for science, pedagogy and morality, a considerable part of the teaching of these text-books is not in accord with the views of the specialists or the result of the latest scientific investigation." From the tenor of his remarks, as reported in the newspapers, it seems as if the Professor were really opposed to the whole idea of "temperance" instruction in the public schools. He claims to have demonstrated by strictly scientific methods, that alcohol is a food, and he reasons that it must therefore be wrong, both scientifically and morally, to teach young people that it is their duty to abstain from it.

This argument is easily shown to be unsound, because based on a one-sided presentation of the facts. From an examination of the latest experiments it is difficult to deny the albumin-saving property of alcohol, and consequently that it is a true food. But, on the other hand,

to quote from a recent editorial in the *Medical Press*, "It must be clearly understood that although alcohol has an alimentary rôle, it must not be recommended for use as such, because *it is also a poison when taken in what in ordinary language is termed moderate quantities.*" This, of course, is the same as saying that the nutritive property of alcohol, when weighed against its toxic action, is not merely unworthy of consideration, but is capable of becoming, practically, a most injuriously misleading factor. And yet here is a reputed scientist who would have us believe that the training up of our youth to shun and to discourage the use of alcohol as a beverage, on physiological grounds, is little short of a crime!

A food, Professor Atwater, that "in moderate quantities," is also—and much more assuredly—a poison, has no food-*value* whatever; hence the very name of your pet theory, and the text of your public addresses, is "a mockery, a delusion and a snare."

THE COMING UNIFICATION.

SOME months ago a confident hope was expressed in our columns that the anticipated restoration of normal relations between the American Medical Association and the medical profession of the State of New York, would be succeeded in the course of evolution by the consummation we so long advocated almost singly and alone—the abolition of medical sectarianism. It now seems as if the auspicious era referred to had already begun, and coöperation in the profession were no longer a theory but a condition. The joint meeting of the schools of medicine at Springfield, Ohio, commented on in our March number, has been followed by the organization of the Physicians' Club of Dayton, in the same State, of which any legal practitioner can became a member. An address on "The Coming Unification of the Medical Profession," delivered at its initial meeting by Dr. Charles A. L. Reed, was marked by his characterisitc breadth of view, and abounded in suggestive and inspiring passages. Especially to be noted are his declaration that "that profession, craft or calling which, in its organized capacity, declines to recognize that which the law recognizes lends itself to the propagation of a sentiment that is inimical to law itself," and his treatment of "the soon-to-be-tabooed subject of sectarianism." "Sects," he said, "have arisen around a central idea, have met their varying fortunes, and have passed away, while their central ideas, if true, have been absorbed into the great body of medical learning." But the practical, "the essential, the paramount question" that to-day confronts us, "is that of the fundamental studies, without which as a basis, no system of medicine, whatever its sectarian title, can lay the slightest claim to being scientific." They include anatomy, physiology, chemistry, hygiene, obstetrics, and surgery. "When gentlemen, after having mastered these fundamental branches to the satisfaction of the State, entertain peculiar views upon purely subsidiary topics, they should be left to the exercise of the widest possible discretion. On the other hand, when an alleged sect comes into the State, as that of Osteopathy comes into Ohio, and asks to have its adherents examined in these subjects, not by the thoroughly non-sectarian, absolutely independent machinery of the State, but by examiners who have been educated in their own alleged and certainly questionable schools, that sect subjects itself, circumstantially, to the suspicion of interested motive—to the certain conviction of a desire to evade reasonable responsibility." Are we to understand from this that the Licensing Board of Ohio is a *unit*, and not, as we had supposed it was in every State regulating the practice of medicine, and as it certainly is in New York, a three-fold body, in which homeopaths and eclectics are separately represented? This concession to sectarianism, we cannot help thinking, is ethically as indefensible as would be a yielding to the claims of osteopathy. Obviously, before the examining machinery of a State can be correctly described as "thoroughly non-sectarian and absolutely independent," these sectarian boards will have to be eliminated. Matters of therapeutics will then, of necessity, be entirely omitted in the examinations, as Dr. Reed seems to imply that they ought to be, when he says that "the medical profession merely asks that uneducated persons, those who do not know the rudiments of medicine, shall be excluded." We are rather surprised that he was not more outspoken on this point.

This, however, is merely one of those questions of detail which will adjust themselves in due time to the satisfaction of all who are identified with the movement under discussion. The keynote of that movement is struck by Dr. Reed when he urges the necessity of "abandonment to the spirit of truth." In therapeutics, as in religion, the age of dogma is passing rapidly away. As the *Charlotte Medical Journal* puts it: "There is a demand in this country for the broadminded and liberal physician who can accept the *truth*, no matter from what source it is derived." No doubt, as Dr. Reed admits, there are established personal and professional relations that imply established mutual interests, and these, in many instances, must undergo a more gradual process of adjustment, before the individual feels at liberty to act. But all such restraints will give way more speedily than most of us can now imagine, before the *Zeitgeist* of the twentieth century.

OPEN AIR WORK FOR CONVICTS.

STATE convict farms have proved a success in Louisiana. The system of hiring out convicts under private contract was abolished by the Constitution adopted in 1898, and the Legislature appropriated $200,000 for experimenting with a new plan. Land was bought and buildings were put up for sheltering those convicts who could be employed outside the prison walls, and many of the able-bodied prisoners were set to work raising cotton, as well as corn and other food crops, all the results of the labor to be applied to the support of the penal institutions. The report just pub-

lished of the first year's operations shows that the total cash income for the two plantations which were established, is $180,000. Besides this ready money, the managing board has several thousand tons of hay, 40,000 bushels of corn, and enough peas and potatoes to carry the men and stock through the next crop year. One of the farms has a steam sawmill which is run by the convicts. Some of them are employed in building levees, and others, unsuited to such labor, are busied with light work inside the prison. The good effect of the system upon the health of the prisoners themselves is shown by the fact that the mortality among Louisiana convicts has been reduced one-half. Moreover, the chances are that many if not most of these men will emerge from prison life, not only with unimpaired physical constitutions, but with an improved morale which may restore them to the ranks of steadily industrious citizens for the remainder of their lives. What a contrast to the fate of New York State's criminal wards"doubled up" in the cells of an unwholesome penitentiary, and kept in enforced idleness during long periods of suspended activity on the part of contractors! Conditions in the Gulf States are more favorable for outdoor employment of convicts then they are in the north, but surely an experiment which has resulted so successfully in Louisiana, would not be altogether hopeless if repeated in this latitude. At least we might follow the example of Georgia, whose convicts have laid out 8,000 miles of excellent roads.

THE MUNICIPAL PREVENTION OF EPIDEMIC DISEASES.

THE question of intervention of a city into the domain of preventive medicine is always one of interest, especially when widespread contagion is extending like a huge wave around the world. The recent outbreak of smallpox extending over Europe and America has again brought attention to this important subject. Reports of Asiatic cholera and the plague are also increasing. The suppression of disease of this character must always come from either state or city action, the individual alone is always powerless. Therefore, the detailed study of a city fighting successfully contagion is opportune at the moment.

Professor Gairdner of the University of Glasgow had a most interesting experience in fighting the introduction of cholera in that important Scotch city. He was placed at a great disadvantage for he had to deal with a dense population composed of the operative classes crowded into tenement houses, closely packed together so that the number of the population to the square mile was greater than anywhere else in Great Britain or Ireland with the exception of Liverpool. He states that in portions of Glasgow 1,000 people were living upon one acre of ground. Not only this, but the habits of the people were bad. Cleanliness was almost impossible and this was intensified by the fact that the houses were without proper lavatory arrangements or even distribution of water, and frequently no means suitable for the removal of the discharge. It was not, as in this city, a condition which had grown up in the past forty or fifty years, but it had come down from previous generations, so that the population was in a condition peculiarly ripe for epidemic disease, in fact, disease of every nature may almost be called epidemic in that city, especially tuberculous troubles, pneumonia, bronchitis and digestive diseases of very young children. In addition, the police regulations were of such a nature that whatever had been done, Professor Gairdner states, were simply scratching the surface. Fully aroused by the possibility of the introduction of Asiatic cholera into the city the authorities of Glasgow succeeded in obtaining an Act of Parliament called the "Glasgow City Improvement Act," which was the basis from which they worked. Glasgow had already suffered severely in past epidemics, and in consequence, the first thing that was done was the establishment of hospitals for the sick. At the same time a detailed examination and report was made upon all the wells within the city of Glasgow. Fortunately the water supply from Loch Katrine had been established, allowing each inhabitant 50 gallons a day of perfectly pure water. It was determined to provide hospital accommodations in such a way that the hospital under the control of the local authorities would be open for cholera cases only, and a competent physician in chief and staff were appointed, together with a corps of nurses and all furnishings and equipments for such hospitals were also obtained. Provision was also made for temporary hospitals as they might be needed. In addition, dispensaries or depots for the distribution of disinfectants which were to be open day and night, were established in all quarters of the city. These were built up partly from the drug stores and partly from the surgeries of the physicians of the town, and it was only necessary to secure a constant service day and night selected with the idea of being convenient to the various parts of the town. These drug stores were also used as points where information might be obtained of the possibility of the existence of either real or suspected cases of cholera, as well as places where medical attendance could be asked for. The location of these stations was made known to the inhabitants of the town. When it came to the question of giving protection to the homes of the people of Glasgow Prof. Gairdner found that he had undertaken a very serious proposition, for nearly half a million people were living in a state of almost bruitish ignorance and neglect. They were accepting whatever Fate gave them with a sullen, blank fatalism and despair.

Prof. Gairdner feared that if this sullenness were dispelled it might be followed on the other hand by an unreasoning panic, and, therefore, it seemed to him the best thing to do was to reach the heads of these various families by personal, direct communication. In order to do this he applied to the Presbyterian churches of Glasgow and obtained several hundred intelligent workers who would be willing to personally visit and carry medical instruction into the homes of the people. This

was done systematically and the enthusiasm from the work spread until about 4,000 active visitors were set at work in the various sections of the town. The results of their work were remarkable; it created a sense of common interest and systematic action which could not have been acquired in any other way. As a result there was no panic and no disposition to conceal individual cases of diarrheal disease. In consequence, Glasgow, with a population badly situated so far as hygienic conditions went, was able to show only 66 cases of true cholera among a population of 500,000 people, while the death rate was very much less than that of any other large town in Scotland.

One very important feature of the work was in connection with the information which was given out It was found that the various newspapers had a habit of distorting or exaggerating cases of which imperfect information had been obtained. To remove this source of mischief Prof. Gairdner established a book at the head sanitary office, where the full data with regard to the condition of the town was entered daily, so that every one, newspaper reporters and the general public, could have the full facts at any time. In this way sensational reporting was held in check and a true statement of affairs given to the public each day.

The only shadow on this picture of the epidemic in Glasgow was the remark made by one of the prominent citizens, that after all the fuss made about the cholera, and all the expense incurred in its prevention, the cholera did not come.

THE USE OF BITTER TONICS IN INDIGESTION.

ONE of the accusations brought against the so-called "Beef Trust" at present so prominent in the public eye, is the statement that they use preservatives to a great extent in the preparation of their meats and that the great increase in indigestion among the American people in the last 10 years is due to a great extent to this cause. Whether this is so or not it is certain that indigestion is perhaps the most common condition which the general practitioner is called upon to treat. At one time it was the fashion to prescribe pepsin and predigested foods in the treatment of indigestion, but latterly it has been believed that the use of tonics is more indicated. Undoubtedly, stomachic tonics have the power of increasing the failing activity of the various glands of the gastro-intestinal tract.

Terray has reported a series of experiments in which he found that the movements in the stomachs of dogs were increased by the administration of the extract of gentian, quassia, taraxacum and quinine. Undoubtedly, these drugs are local in their action. In overdoses they are irritants producing even acute irritation of the gastric mucous membrane. They are especially useful in that form of indigestion which is due to depressed condition of the stomach. Of course, where the stomach is in a state of inflammation these drugs are not indicated. It has been known for years that the administration of these drugs was followed by an increase of appetite and they have been a matter of household medicine for many, many years. There is a belief nowadays growing that they also prevent fermentation changes, but being given in small doses this does not interfere with the process of digestion. Quinine has been known in large doses to have a decided anti-fermentative power and it is well, therefore, not to give this drug too close to a meal. Mays believes that these agents possess the power of stimulation of the absorption of the digestive products by the blood vessels. Hofmeister has shown that in the adenoid tissue of the mucous membrane of the alimentary canal, there is quite a proliferation of white blood corpuscles during digestion and these imbibe peptone and in this way it is taken up and distributed throughout the body in counter distinction to the office of the red blood cells which is to absorb and carry oxygen. The manner in which the tissues take the nutritive matter from the white blood cells is as yet unknown.

One of the best known of the simpler tonics is gentian. Given in the form of the compound tincture, which contains bitter orange peel and cardamon, it is an excellent tonic giving force to the circulation and warming the body. It is especially useful in dyspepsia due to gouty conditions and is recommended highly for the nausea and vomiting of pregnancy. Another well-known drug is quassia. This is regarded by Wood as the most active of all simple tonics. It contains an active principle, quassin, which is quite an irritant poison, and quite a number of cases have been reported where death has followed from its rectal injection.

The old standby on which many a country boy and girl was brought up is "boneset tea." It is extremely bitter in character so that it becomes an emetic in larger doses. Another very favorite tonic is wild cherry bark which contains the active principle amygdalin and also a trace of tannic and prussic acid. It is an astringent and tonic and given in the form of the infusion it is excellent. Syrup of wild cherry also makes an excellent tonic for the administration of other medicines. There are a number of other drugs which are excellent in their place, among them being columbo root, wormwood, prickly ash, golden seal, myrrh, cloves, peppermint, cardamon, ginger, black and red pepper and kajaput in the form of the oil, especially in cases of acute indigestion. Chamomile is another old time remedy which is not used to-day as much as it should be. Given in the dose of the infusion it is an excellent stimulant and tonic. Virginia snake root, which contains a volatile oil and bitter principle, is an excellent tonic especially when used with some powerful bitters, but in overdoses it is an emetic. The tincture is a very excellent way to administer this drug.

It must be remembered that these drugs are in no sense foods, they simply supply the force to excite the lymph glands of the alimentary mucous membrane to manufacture and carry the nutritive material into the tissues. It is for this reason that as they increase the power of digestion so that as the leucocytes carry the peptone there is created a desire for more food.

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ATLAS AND EPITOME OF OPERATIVE SURGERY. By Dr. Otto Zuckerkandl, Privatdocent in the University of Vienna. From the Second Revised and Enlarged German Edition. Edited, with additions, by J. Chalmers DaCosta, M.D., Professor of the Principals of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, etc. Second Edition, Thoroughly Revised and Greatly Enlarged. With 40 colored plates, 278 text illustrations, and 410 pages of text. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $3.50 net.

This excellent work, on of Saunders' well-known Medical Hand-Atlases, needs no further recommendation to English-speaking readers than its author's name —Dr. Zuckerkandl. The rules and methods of surgical procedure are stated with the clearness that springs from definite knowledge and the emphasis born of conviction. The operations of modern surgery are described lucidly and tersely, making the book a worthy guide alike to the student and the practising surgeon. The verbal descriptions are most accurately reinforced and illuminated by a large number of original colored lithographic plates and text cuts.

In this new edition the work has been brought precisely down to date. The revision has not been casual, but thorough and exhaustive, the entire text having been subjected to a careful scrutiny, and many improvements and additions made. A number of chapters have been practically re-written, and of the newer operations, all those of special value have been described. The number of illustrations has also been materially increased. Sixteen valuable lithographic plates in colors and sixty-one text figures have been added, thus greatly enhancing the value of the work. There is no doubt that the volume in its new edition will still maintain its leading position as a substitute for clinical instruction.

ATLAS AND EPITOME OF OTOLOGY. By Gustav Bruhl, M.D., of Berlin, with the collaboration of Professor Dr. A. Politzer, of Vienna. Edited, with additions, by S. MacCuen Smith, M.D., Clinical Professor of Otology, Jefferson Medical College, Philadelphia. With 244 Colored figures on 39 lithographic plates, 99 text illustrations, and 292 pages of text. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $3.00 net.

This excellent volume, the first attempt, to our knowledge, to supply in English an illustrated clinical handbook to act as a worthy substitute for personal instruction in a specialized clinic, is, indeed, a magnificent addition to Saunders' Series of Medical Hand-Atlases.

The work is both didatic and clinical in its teaching, the latter aspect being especially adapted to the student's wants. A special and highly commendable feature is the very complete exposition of the minute anatomy of the ear, a working knowledge of which is so essential to an intelligent conception of the science of otology. As in all this series of atlases, the illustrations are beautifully executed in colors, and illuminate the text in a singularly lucid manner, portraying pathologic changes with such striking exactness that the student should receive a deeper and more lasting impresion than the most elaborate description could produce. Further, the association of Professor Politzer in the preparation of the work, and the use of so many valuable specimens from his notably rich collection, especially enhance the value of the treatise. The work contains everything of importance in the elementary study of otology, and, without question, is a most valuable contribution to medical literature.

ANNUAL REPORT ON THE YEAR 1901. By E. Merck, Darmstadt. Pp. 207.

This little brochure contains a review of the new and more important pharmaceutical preparations and information relating thereto, which have come under the notice of the Editor during the year. Under Original Communications is an interesting and exhaustive article on Opium Tests, which cannot fail to be of service in the study of this subject. Under the headings of Preparations and Drugs, may be found a vast amount of information, clinical and pharmaceutical, mostly concerning the newer drugs, which will be of interest to the student who desires to keep abreast the times in this department of medicine.

THE MEDICAL TREATMENT OF GALL-STONES. By J. H. Keay, M.A., M.D. Philadelphia: P. Blakiston Son & Co., 1902. Pp. 126. 12 mo. Price, $1.25.

This is a very interesting discussion of an important subject. The author says that the mere presence of gallstones affords no reason for operation, that, of those who suffer, more are cured by medical and hygienic means than surgical, and that operation may relieve symptoms, but does not radically cure the disease.

In respect to treatment the author says he has no infallible remedy to propose, but he is firmly convinced that if suitable treatment is adopted, the question of operation will almost never arise, and he speaks from personal experience.

The chief aim of radical treatment is not to expel stones, nor to dissolve them, but to prevent their formation and promote a free flow of healthy bile. The book is worthy the attention of any who are interested in the subject.

THE OPERATIONS OF SURGERY. By W. H. A. Jacobson, M.Ch. Oxon., F.R.C.S., Surgeon to Guy's Hospital; Consulting Surgeon Royal Hospital for Children and Women; Member Court of Examiners Royal College of Surgeons, etc.; and F. J. Stewart, M.S. London, F.R.C.S., Assistant Surgeon Guy's Hospital and to the Hospital for Sick Children. Surgeon in Charge of the Throat Department, Guy's Hospital. Fourth Edition, Revised, Enlarged and Improved. 550 Illustrations. Two Volumes: Volume I., Operations on the Upper Extremity; Operations on the Head and Neck; Operations on the Thorax. Volume II., Operations on the Abdomen; Operations on the Lower Extremity; Operations on the Vertebral Column. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, 1902. Cloth, $10.

This book is intended especially for the use of those recently appointed on the Hospital Staff, and for those preparing for the higher examinations, but it will be found equally useful to the general practitioner, who has anything to do with Surgery. The work has been before the profession now fourteen years, in its various editions, and must be considered not only of service, but popular with readers. The general plan of the book remains as before, the divisions being by Regions, in the interest of anatomy.

The work has been necessarily so expanded by the natural increase of material, that a single volume would be too bulky for convenient use, hence the division into two, which is much better.

The text is classically and concisely presented in clear type and fully illustrated in a most practical manner, for the use of beginners and for those who from lack of opportunity have become rusty. Any reader who has use for such a work will not fail to find in this what he requires.

The publishers are to be congratulated for the excellence of their part of the publication.

A Practical Manual of Bacteriology for Students and Physicians. By A. C. Abbott, M.D., Professor of Hygiene, University of Pennsylvania. New (6th) Edition, Revised and Enlarged. In one 12mo. Volume of 636 pages, with 111 illustrations, of which 26 are colored. Cloth, $2.75 net. Lea Brothers Co., Publishers, Philadelphia and New York.

The past three years have been productive of rich results in bacteriological study, and the new edition of this excellent manual appears opportunely.

Among other matters of great and practical interest which the volume includes are the recent findings regarding the causation of cerebro-spinal meningitis and dysentery; the lately revived investigations in tuberculosis, and the discovery of the new group of micro-organisms, which appear to be so closely allied to the bacillus tuberculosis; the very considerable additions that have been made to our knowledge of the mechanism of infection and immunity, etc.

Six editions of this work, each larger than its predecessor, in ten years, is a record reached by few medical books. This rapid and increasing demand offers frequent opportunities for revision, and each of these six editions presents not only a complete renewal, but a considerable enlargement, so that the volume now is nearly three times its original size.

The book has become an accepted authority and a strong favorite with both student and instructor.

International Clinics. A Quarterly of illustrated clinical lectures and especially prepared articles in all branches of Medicine and Surgery. Edited by Henry W. Cattell, A.M., M.D. Philadelphia, J. B. Lippincott Company, Vol. I. Twelfth Series, 1902.

This volume contains biographical sketches of Drs. S. Wier Mitchell and John A. Wyeth, with illustrations. Under therapeutics we find articles on The Use of Opium in Daily Practice, Habitual Constipation, Thyroid Poisoning, A Description of the Methods of Investigating the Action of Drugs, The Climate of New England, etc., and under Medicine and Surgery, many interesting subjects are elucidated. The contest between the Advocates of Symphysiotomy, and the partisans of Cæsarean Section is discussed. Over one hundred pages are devoted to a review of the progress of medicine during the year 1901, the whole forming a most valuable and instructive volume.

The Practical Medicine Series of Year Books, comprising ten volumes on the year's progress in Medicine and Surgery, issued monthly under the general editorial charge of Gustavus P. Head, M.D. Vol. V. Obstetrics, edited by Reuben Peterson, A.B., M.D., Professor of Obstetrics and Gynecology in the University of Michigan, and Henry F. Lewis, A.B., M.D., Instructor in Obstetrics and Gynecology in Rush Medical College. April, 1902. Chicago, The Year Book Publishers, $1.25. pp. 233.

Volume IV., covering Gynecology, is edited by Emilius C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, with the collaboration of William Healy, A.B., M.D.

This ideal year book affords 2,400 pages divided into ten volumes, at the low price of $7.50, the aim being to give the digested views of the best contributors to our literature for the past twelvemonth. The work seems to be a useful one, and is thus appreciated by the profession.

A Dictionary of Medicine, including general pathology, general therapeutics, hygiene, and the diseases of women and children, by various writers. Originally compiled by Sir Richard Quain, Bart., M.D., LL.D., F.R.S., with the assistance of Frederick Thomas Roberts, B.Sc., M.D., F.R.C.P., and J. Mitchell Bruce, M.A., M.D., LL.D., F.R.C.P. Third edition Largely rewritten and revised throughout. Edited by H. Montague Murray, M.D., F.R.C.P., Joint Lecturer on Medicine, Charing Cross Medical School, and Physician to out-patients, Charing Cross Hospital; Senior Physician to the Victoria Hospital for Children, Chelsea, and to the Foundling Hospital, assisted by John Harold, M.B., B.Ch., B.A.O., Physician to St. John's and St. Elizabeth's Hospitals, and Demonstrator of Medicine at Charing Cross Medical School, and W. Cecil Bosanquet, M.A., M.D., M.R.C.P., Physician to out-patients, Victoria Hospital for Children, Chelsea, and Pathologist to Charing Cross Hospital; Late Fellow of New College, Oxford. It contains 17 new plates, 14 being in colors. pp. 1912. Half morocco, $10.00. D. Appleton & Company, Publishers, New York, 1902.

The editor of this work has tried to produce a book which shall serve as a reliable and readily available source of reference for the practitioner and the student of medicine. In doing this he has called to his assistance two hundred and eighty-four eminent specialists to bring the work thoroughly up to date. The general scheme of the book remains as Sir Richard Quain left it, although some departures have been made from the original plan. Many articles have been written for various reasons, or rewritten, and a large number added, and more space has been allotted to what are generally known as special branches. A large number of cross references have been inserted in order to bring under the notice of the reader articles giving further information on the various subjects.

The work is so well and favorably known that it is scarcely necessary to do more than announce the issue of a new edition, and it is of course understood what that implies in competent hands. The last edition was edited by Dr. Quain and published in 1894. So it is quite time for another, considering the rapid progress that has been going on since that time. It is the handbook *par excellence*.

—A discovery has been made which will enable the blind to read and write using the same alphabet. The blind write by making impressions on a sheet of paper with a stylus or sharp pointed instrument, and the series of dots which must be interpreted by the reader must be read from the opposite side of the sheet from that on which the writing or printing was done. This reversing process has made it necessary for the blind to learn two alphabets. By the new discovery the letters are raised as they face the writer. By this means the blind person may write with the right hand and read with the fingers of the left.

CORRESPONDENCE.

SOME DUTIES OF THE AMERICAN MEDICAL ASSOCIATION.

THE meeting of the American Medical Association, for the first time in many years, within the State of New York and the full expectation that at this meeting the reunion of the state society with the national body will be consummated, is of far wider significance than at first appears. It indicates a universal tendency toward taking things as they are rather than contending for obsolete prejudices.

The perfection of the plan of a house of delegates is another indication of the opportunities for unifying and strengthening the American Medical Profession. With the growing strength of the national organization new duties devolve upon it which, we feel sure, will be welcomed and some of which have been anticipated.

In all lines of civilized thought and industry, the tide is setting back from independence toward catholicity. United effort by a strong central organization has its obvious advantages offset only by the tendency toward usurpation of individual rights. Our loose, uncentralized government which cannot at present be remedied, throws an added responsibility upon professional and industrial unions, for the latter must assume some of the functions which in most countries are easily controlled by the government itself.

In times past mankind has assumed that unity of organization and of end must include unity of opinion and of methods. But a right minority opinion has its greatest power for good in the parent organization while false doctrine does the least harm while freely exercised under the control of the majority. Individualism must have full play in a free community but it is rarely that the individual is so thoroughly out of harmony with the community at large that he should be seggregated from its general organizations.

The regular medical profession of the state of New York has been for some years separated into two bodies: those who formally admitted the practical necessity of recognizing and of consulting or co-operating with sectarian physicians when circumstances required; and those who formally denounced such consultation and co-operation as an absurdity but who, for the most part, set aside their prejudices, as demanded by a common-sense consideration of the immediate issue. This fact, in itself, was the best argument of the old state society and, indeed, other state societies have within the last few years followed the precedent of the New York society without suffering excommunication.

But as soon as the reunion of the national and the state body is consummated, a broader phase of the same issue is forced upon the attention of the American Medical Association. If it is allowable to consult in emergency with sectarian physicians, and to co-operate with them to bring about educational reforms and to secure legislation for the good of the entire medical profession, why would it not be wise to secure the full union of all physicians, whatever their beliefs as to practice or former affiliations, provided they are honorable professional gentlemen, of general attainments and technical training fairly comparable to those of the "regular" profession? A close analogy with conditions in the religious world does not exist, for the medical profession as a body has never had a creed or a ritual which could be objectionable. There probably will always exist those who hold such radical views of medicine and of everything else that they will feel no sense of affiliation with the general concensus of physicians or others. But every physician who feels himself in harmony with the general principles of the profession and who would like to add his influence to the general body of physicians should, it seems to us, be welcomed, whatever his views as to the relative desirability of surgery or medicine, dosage, choice of drugs or any other purely opinionative belief, and whether he happens to be in accord with the views of the majority or not.

The organization of medical societies is an important function of the American Medical Association already fully realized and begun. Just at present these are suffering from a plethora of independent organizations. Aside from purely social unions, it seems to us that all medical societies should be organized as components of one great body. To a large degree the organization must follow the political line of nation, state, county and city. As a matter of political economics, we believe personally that every large city should be a county. At any rate, it would be desirable to unite city and county societies whenever the city constitutes the bulk of a county. Each organization, national, state and local, will naturally transact its business and part of its scientific work as a unit, and will be divided into sections according to special interests. Obviously there will be sections of the national body, for instance that of state medicine, which could not well be represented locally, and there are some limitations of practice which, for lack of numbers, cannot well be represented by sections in all instances.

There remain a number of organizations, such as the American Academy of Medicine, the National Association of Colleges and the various societies represented in the Congress which maintain requirements for membership which would exclude the great majority of the profession. Even these, in our opinion, should have at least a quasi dependence upon the national association or should co-operate with it so far as may prove practicable.

A very important province of the national medical body should be the investigation and control of the various semi-private or entirely private enterprises in which the medical profession is vitally interested. The pharmacopeia ought certainly to be controlled by the profession as a whole rather than by any part of it, however well chosen. Practically such a change of proprietorship would work injustice to no one nor would even the personnel of the revising board be materially changed by the proposed transfer.

Perhaps the most practical and most urgently needed general function of the American Medical Association is the appointment of a board with sufficient authority and means to report upon the various proprietary drugs and foods which now reach the profession wholly unsupported by any authority except the statements of financially interested parties. All honest manufacturers would welcome such a board and they might even be willing to contribute to its support. Under existing conditions the lives of many patients hang upon the good faith of a manufacturer, seldom competent personally to vouch for the statements which he issues and often not able to command the expert skill needed. In many individual cases there is no doubt but that the profession is using proprietary substitutes for official drugs which are either inferior to the standard or which are merely substitutes or simple compounds possessing no claims to our attention. Many foods for invalids and infants are also probably lacking in the supposititious nutriment or they contain nutriment in improper form.

A prime function of all physicians and, therefore, of their national organization is the investigation of edu-

cational requirements, both of matriculants in and graduates of medical colleges. Closely in line with this function is the inspection of the facilities of colleges themselves. The principal economic drawback to the practice of medicine is the relatively enormous excess of physicians. The restriction of medical licensing means the improvement of quality and the lessening of quantity. The interests of the profession and of the community are one in this regard. But the time is past when even the private colleges, unless of the more venial type, are seeking merely their own selfish pecuniary interests. Conversely, the duty of the Association should be performed in a broad spirit and with none of the hostility to the sources of professional rivals which has sometimes been manifested. The Association of Medical Colleges has, for some years, met at the time and place of the American Medical Association. It would unquestionably welcome a closer affiliation and the moral support of the entire professional body.

Similarly the medical journals have sent their representatives to attend the meetings of the general Association and, in a similar spirit of friendly control, they should accept the same supervision. Unquestionably those journals that have catered to the lower class of physicians and those that have shown a disposition to take everything and render nothing in exchange, would oppose any influence from those for whom they nominally exist. But this very fact would make the distinction clearer and all worthy journals would be the gainers from an association that would facilitate their dealings with advertisers.

The responsibilities of the American Medical Association broaden with its increasing influence. We have suggested only a few of the duties and opportunities that lie immediately before it. A "REGULAR" PHYSICIAN.

A PRESENTATION CUP TO SELDON H. TALCOTT.

WEDNESDAY evening, May 14th, at the Waldorf-Astoria there convened over one hundred physicians, coming from various parts of the country, in acceptance of an invitation to honor Dr. Talcott in recognition of his long and valuable services in the medical profession, but more especially to celebrate his twenty-fifth anniversary as Superintendent of the State Hospital for the Insane at Middletown, New York. Dr. Talcott began in this special line of work at the Ward's Island Hospital, a portion of which was set apart for this purpose. From the Ward's Island Hospital, now the Metropolitan, he was called by the trustees of the Middletown State Hospital to take charge of that institution. His percentages of cure and his method of treatment, the same being in line with more modern intelligence, has justly given him the place, the peer of any in his specialty.

That the profession should recognize in this spontaneous manner a good work which he has performed is not only commendable, but shows a generous appreciation of his humane efforts. Dr. Talcott by his education, being a graduate of Hamilton College, by his gifts as an orator, by his keen appreciation of everything which pertains to his specialty, by his observation in the study of Hospitals abroad devoted to this subject, has reached his present high position as an alienist, it will be seen, in the most natural, logical way. The banquet last evening, in our opinion, was a living token which its recipient must ever look upon with pleasure, satisfaction and pride. How much more rational to have our services thus appreciated while we are living, how much more satisfactory for the recipient and his immediate friends, than the cold expensive piece of granite which stands off on the distant hills, surrounded by those whose tongues are ever silent in this world, solitary and alone, to be gazed at by the casual observer only with a curious glance or by indifference. The banquet was presided over by Dr. Butler of Montclair. Dr. N. Emmons Paine, formerly one of the assistants in the State Hospital and by whose efforts it might be said the occasion largely owes it success, presented a beautiful book containing over one hundred letters complimentary to Dr. Talcott's distinguished career. Only five were read, however, as samples of the united opinion as to the eminent services which Dr. Talcott had rendered as an alienist. No more beautiful letter, nor a better support could have been rendered of his character than that of Dr. Egbert Guernsey, who was unable to be present on account of prolonged illness. So beautiful was the wording and so strong the expressions of approbation that it called forth marked applause. It will make this letter too elaborate to particularize in full detail the delight and satisfaction experienced by all present in regard to other speeches made. I will draw this communication to a close when I mention the presentation of the beautiful Loving Cup made by Dr. Roberts in the absence of Dr. Wm. Tod Helmuth, too ill to be present. Appropriate and witty lines in poetic form were presented, written by Dr. Helmuth, after which Dr. Talcott in his masterly eloquence responded with deep feeling and with marked expressions of appreciation. The only speech made not down as a response was that of Dr. A. E. Macdonald of Ward's Island, who spoke in a happy vein in regard to Dr. Talcott's career. When the banquet closed each felt the occasion had not only been exceedingly enjoyable, but that a just recognition for valuable services had been carried out in a most successful and happy manner.

May 15, 1902. M. O. TERRY.

William Tod Helmuth, M.D., LL.D., Dean of the N. Y. Homeopathic Medical College, died suddenly of angina pectoris on May 15th, at the age of 69.

Dr. Helmuth was for many years Professor of Surgery in the College of which he was Dean, and one of the leading surgeons of his school. He had also been connected with numerous hospitals as surgeon, a leading and active member of the societies of his School of Medicine, and was considered one of their most brilliant representatives.

Frederick A. Castle, M.D., late editor of the *American Druggist*, died of intestinal cancer, April 28th, in his sixtieth year.

Dr. Castle was a hard and worthy worker in his line. He formerly occupied the chair of materia medica and therapeutics in Bellevue Hospital Medical College, and was a most active promoter of the Academy of Medicine.

—By direction of the War Department, one of the seacoast defences near Baltimore, Md., will hereafter be known as Battery Lazear. This action was taken, so the order says, "in honor of Dr. Jesse W. Lazear, late an acting assistant surgeon, United States Army, who, while on a visit to Las Animas Hospital, Havana, Cuba, on September 13, 1900, and while collecting blood from yellow fever patients for scientific study, was bitten by a Culex mosquito and deliberately allowed it to satisfy its hunger, and, as a result, contracted yellow fever, of which he died on September 25, 1900, thus by his self-sacrifice positively determining that the mosquito carries yellow-fever infection."

HOSPITAL REPORTS.

THE TUBERCULOSIS INFIRMARY OF THE METROPOLITAN HOSPITAL, BLACKWELL'S ISLAND, DEPARTMENT OF PUBLIC CHARITIES, NEW YORK, THE FIRST INSTITUTION UNDER THE MUNICIPAL AUTHORITIES OF THE CITY OF NEW YORK, FOR THE EXCLUSIVE CARE OF TUBERCULOSIS PATIENTS.

BY EGBERT GUERNSEY RANKIN, A.M., M.D.,
Physician to the Metropolitan Hospital and Tuberculosis Infirmary, Department of Public Charities, New York.

On January 31, 1902, one month after entering office, the Hon. Homer Folks, Commissioner of Charities, fully appreciating the great need of a public hospital for the exclusive care of persons suffering from tuberculosis, ordered one of the vacant buildings on Blackwell's Island, formerly occupied by the insane, to be opened for the reception of tuberculosis patients, thus establishing the Tuberculosis Department of the Metropolitain Hospital; a movement which is the most important advance in the general care of the city's sick poor which this generation has been privileged to see and which will distinguish for all time Mr. Folks' administration in the annals of the Department of Public Charities.

The presence of tuberculosis patients in the city's hospitals has always been a burden to the medical service of its several institutions, especially Bellevue, the Metropolitan and the City hospitals. The wards were overcrowded, there were no means for the application of modern methods of treatment, and none whereby proper segregation could be instituted. Thus the patients were not only a menace to each other, but a constant source of infection to those free from tuberculous disease. The medical profession and the Department of Public Charities have every reason, therefore, to rejoice that this unhappy condition of affairs will soon be entirely a thing of the past.

The opening of the present institution is but the beginning of an elaborate plan. A large establishment consisting of three separate buildings, containing in all about four hundred and fifty beds, with all the modern appliances, examining rooms, apparatus for throat treatment, operating room so that tuberculous patients will not need to be transferred, a careful system of sputum sterilization, X-ray apparatus, bacteriological and biological laboratory and two pavilions for open air treatment—one for men and one for women—are contemplated.

The buildings in question will lend themselves admirably to their new use. At present they are so much out of repair that only one can now be utilized. Their renovation, however, will soon be under way and it is expected that all needful repairs will be completed early in the autumn, when all tuberculosis patients in the Department of Charities will be cared for within their walls.

The situation on Blackwell's Island is almost ideal for a city institution for consumptives, blending, as it does, isolation and convenience. It may be argued that the salt air from the East River is not the best for pulmonary tuberculosis. While in many instances this may be true, it is infinitely better than the air of close tenements of lodging houses. Moreover, the statistics of the new infirmary have thus far been so encouraging that it is hoped that they will in future be able to show that pure air alone will accomplish much whether it be from the sea or from the mountains.

The new institution, named by Commissioner Folks the Tuberculosis Infirmary of the Metropolitan Hospital, will be maintained as an integral part of the latter. The buildings of the Infirmary are sufficiently near the Hospital to permit of their co-administration which obviously commends itself from the standpoint of economy, yet they are sufficiently isolated to prevent infection. The Metropolitan Hospital will then contain over a thousand beds, there being over five hundred in the medical, surgical, obstetric and genito-urinary departments of the main building.

The sudden introduction of so large a number of patients which the opening of the new infirmary entailed, necessarily placed a great amount of additional work upon both the administrative and medical services of the institution. Thanks to Superintendent William B. O'Rourke, the former was in every way equal to the increased demands, while the members of the House Staff and nurses met cheerfully and earnestly the longer hours and increased responsibilities.

The medical service has been under the care of Dr. J. Robie Wood, Dr. E. D. Klots, Dr. Walter Sands Mills, Dr. John W. Dowling, and the writer.

The personal interest of Commissioner Folks in the new institution, it is needless to say, is warmly appreciated by the entire Medical Board of the Metropolitan Hospital which feels that the medical custodianship of the largest tuberculosis hospital on the continent and the first established by the municipal authorities of the City of New York is an honor and expression of confidence for which it is grateful.

The encouraging nature of the work so far accomplished is set forth in a report prepared by Dr. Merritt I. Beers and Dr. R. E. Mitchell, Senior Assistant House Physicians, and presented to the Commissioner of Charities on May 1, 1902. The report is as follows:

"To the Hon. Homer Folks,
Commissioner of Charities, New York.

Report of all cases admitted to the Tuberculosis Infirmary of the Metropolitan Hospital, Blackwell's Island, from the opening of the Infirmary on January 31, 1902, to April 30, 1902.

Since January 31, 1902, 369 patients have been received. With few exceptions, all were in more or less advanced stages of pulmonary tuberculosis. Rather more than 50 per cent. were in the last stage of the disease with every indication that death was not far distant. The other 50 per cent. were of two classes; first, those in whom all the typical symptoms of tuberculosis were present but who retained a fair amount of strength and bodily nutrition, and second, those whose general condition was less favorable yet who retained sufficient strength to be up the greater part of, if not all, the day.

Eighty-three deaths have occurred; 40 occurred on an average of 12 days after entrance; 3 occurred on the day following entrance. 8 deaths occurred from sudden hæmorrhage.

Forty-six patients were transferred to other wards of the hospital; 8 cases because of some surgical condition and the remaining 38 because they showed no evidence of tuberculosis.

Ninety-four patients have been discharged; 91 went at their own request and 3 were sent out to preserve discipline. Of these, the discharged patients, 55 were much improved and have gone about their work or else to the country or mountains, etc., at the suggestion of their physicians, 29 were less improved, 17 were not improved.

A report of a few of the better cases in detail is as follows:

T., age 48; laborer; married; admitted Feb. 3, 1902. History of cough, expectoration, hæmorrhage and sweats; tubercle bacilli present in sputum; fairly well nourished; right apex and upper lobe involved. The patient has gained 16 pounds in weight, cough much less, expectorates little,

feels strong and well. Sweats have ceased and he has had no hæmorrhage since entrance.

McT., age 42; laborer; married; admitted March 10, 1902. Tubercule family history (father, mother and brother). Severe hæmorrhages, pleurisy, general weakness, cough, expectoration and sweats; bacilli present; both upper lobes affected. Patient has gained 7½ pounds; pleurisy still troubles somewhat; sweats very infrequently; no hæmorrhages; cough and expectoration much less; now he feels quite strong; sleeps well; has a good appetite; whole condition is excellent.

B., age 50; widower; iron worker; entered Feb. 1, 1902. History of wasting, gradual loss of strength, cough, expectoration, hæmorrhages and night sweats; tubercle bacilli present in sputum. Has had a discharging ear for a number of years. Patient has gained 8¾ pounds in weight, has no sweats, but one hæmorrhage since his entrance; his ear has stopped discharging, cough and expectoration decreased; general strength greatly increased.

P., age 40; married; iron work; admitted Feb. 1, 1902; poorly nourished. History of cough, expectoration, night sweats, general weakness (progressing). Bacilli numerous in sputum. Left lung nearly all involved and right apex. Patient gained 16¾ pounds, cough almost gone; expectoration scanty; sweats ceased; general strength much increased. This patient left the hospital April 9, 1902, in good condition.

During the month of April 114 patients were admitted. Of these, 26 have died, 44 were discharged much improved, 8 unimproved, and 16 were transferred.

At the request of the Commissioner the cases at present in the infirmary have been classified as follows:

A.—In the incipient stage.

B.—Cases showing fever, cough, night sweats, tubercle bacilli, but retaining a fair amount of strength and bodily nutrition—moderately hopeful.

C.—Cases with all symptoms clearly developed but general condition less favorable than in the preceding class, though still able to be up a portion or the whole of each day and not in the last stages of the disease.

D.—Cases in the last stages of the disease.

E.—Unclassified cases, those too recently admitted to admit of proper classification.

Class A. No. of cases	1
This patient has gained 6¾ pounds.	
Class B. No. of cases	55
32 have gained on an average 4 pounds in 67 days. The remainder have not been under observation sufficiently long to make definite statement.	
Class C. No. of cases	44
24 of them have gained on an average of ½ pound in 64½ days. A greater portion of the remainder have been in the hospital for a short period. Some of them will probably be found on subsequent observation to belong to Class D.	
Class D. All cases in the last stages	40
Class E. Unclassified	6
	146
Greatest gain in weight of any one patient, 16¾ pounds.	

General summary, Jan. 31 to April 30, 1902:

Number discharged much improved	55
Number discharged improved	22
Number discharged not improved	17
Number transferred	46
Number died	83
Number remaining in hospital	146
	369

M. I. Beers, M.D.,
R. E. Mitchell, M.D.,
Senior Assistant House Physicians.

Report approved.

Committee on Tuberculosis, Metropolitan Hospital Medical Board.

Ephraim D. Klots, M.D.
Walter Sands Miles, M.D.
John W. Dowling, M.D.
Egbert Guernsey Rankin, M.D.,
Chairman.

It is proposed in the near future to publish reports in which the methods of treatment and general care of the patients will be described, a careful system of wards records having been established for that purpose, and it is hoped when the institution is fully equipped that the study of so large a number of patients suffering from tuberculosis will be the means of throwing more light upon management of that insidious disease.

CASE OF MOLLUSCUM FIBROSUM.

BY H. O. SOMMER, M.D., WASHINGTON, D. C.

THIS case came under my observation by courtesy of Dr. Wallin (Dr. Root's service).[1] It was one of multiple soft fibromata and desmoides, the latter predominating on the anterior aspect whereas the pedunculated soft fibromata were confined to the back as "Cutis pendula," rarely over 2 inches long. The head was entirely free and nowhere on the body was a degree of "Flap-elephantiasis" attained as over the eye

of Lesser's beautiful case, or that in Dennis's System. Ulceration from rubbing, etc., as well as sarcomatous transition was, at least, not yet manifest. The cut shows the desmoids scattered chiefly along the extensor sides of the forearm and legs, though the term "grouping" would hardly apply (comp. v. Recklinghausen). History of heredity, though not positively excluded, was not obtained (compare Lesser's case of three generations). Nativity, New York.

—A wonderful story comes from Waco, Texas. A seven-year-old child swallowed a silver half dollar, causing serious symptoms. A physician was called, who promptly administered a little mint. There was an immediate change and before nightfall the child passed five silver dimes.

[1] Metropolitan Hospital, N. Y.

RETROSPECTIVE THERAPEUTICS.

Hay Fever and Asthma Permanently Cured by Means of Nasal Surgery.—Floyd S. Muckey, in a paper read before the Minnesota Valley Medical Society and reprinted from the *Northwestern Lancet*, bases his argument on the fact that it is pressure in the nose which is the primary cause of all the disagreeable manifestations of the various reflexes involved in the above named affections. Any rational treatment, therefore, must be directed towards the relief of this. The pressure being caused by hypertrophied mucous membrane, exostoses, deflected septum, or tumors, the treatment consists in the removal of these abnormal conditions. Exostoses should be removed with the saw, and deflection of the septum corrcted by an appropriate operation. Hypertrophy of the mucous membrane should be removed by the use of the cold wire snare. All of these measures can be carried out by a skilled operator without any pain or inconvenience on the part of the patient, without any danger from hemorrhage and in a comparatively short space of time. As to the recognition of these growths, the author believes that the failure to cure hay fever and asthma may be attributed to the fact that the rhinologist has not properly discriminated between healthy and diseased mucous membranes. From the considerations set forth and illustrated by a report of several successful cases, "some very important conclusions may be drawn." The first is that hay fever and asthma are curable diseases, and in fact are much more amenable to treatment than nine-tenths of the diseases to which human flesh is heir. That these cures can be effected without recourse to the almost endless list of drugs and nostrums which are advocated for their relief, from the "Liquor Ambrosiæ" of Curtis to the poisonous compounds of sedatives and alternatives sent out by the quack institutions which advertise to cure these most common maladies.

"The second is that the use of the cautery in the nose in any form must be tabooed as being a most unscientific and unsurgical procedure."

The Radical Treatment of Ischuria, Due to Prostatic Hypertrophy, by Means of Rectal Cauterization of the Prostate.—Dr. Angelo Negretto devised this method of treating hypertrophied prostates in 1895, and has since then tried it in a number of cases. The present article (*Riforma Med.*, Nov. 22-23, 1901) contains the results obtained in his last series of ten cases. He prepares the patient for operation by the administration of a purgative and a mixture of bismuth and opium. An hour before the operation he gives several enemata of glycerin. General anesthesia is then induced, the patient is placed in the position for perineal cystotomy, with elevated pelvis, and the rectum is stretched with a Weiss's speculum and the upper part of the rectum is packed with gauze so as to protect the operative field. The specially devised point for the Paquelin cautery, which is provided with a scale enabling the operator to control the amount of tissue destroyed, is now introduced until it reaches the middle of the rectal surface of the prostate. The extent and depth of the cauterization depend upon the size of the gland. The operation lasts, on the average, two minutes, and ten or twelve days later, the catheter is withdrawn permanently and the patient urinates spontaneously. In nearly every case the method described has effected a speedy and complete cure of the hypertrophy and of the urinary obstruction, according to the author. Only in one case was there no improvement, that of a man with enormous prostate and severe vesical complications. The method outlined is directed especially against the congestive element of prostatic hypertrophy, and is useful particularly in those cases where this element plays a great role. It has the advantage of not interfering with the generative functions.

The Pathologic and Therapeutic Aspects of the Effects of the Roentgen Rays.—Beck (*Med. Rec.*, Jan. 18, 1902) describes three forms of Roentgen-ray dermatitis: (1) Hyperemic; (2) bullous; (3) necrotic. The most characteristic difference between ordinary burns and the integumental changes produced by the Roentgen light is the fact that the latter do not manifest themselves before a period of incubation of about two weeks. Weak individuals and blondes seem to be especially predisposed. The patient who is advised to be treated by the Roentgen light must be informed of the risks of burning. As a precautionary measure, the first exposure should be of but five minutes' duration; a week should elapse before the second sitting; if after the third sitting, two weeks after the first, no inflammatory signs are seen, longer exposures with shorter intervals can be attempted. For the treatment of most skin diseases an exposure of from five to ten minutes, repeated every third day, is sufficient. The tube is, as a rule, placed about 4 inches from the area to be radiated. Healthy skin surfaces should be protected by tinfoil or lead plates during the process of irradiation, and tubes of low vacuum (soft tubes) employed. Sycosis, favus, eczema, psoriasis, rosacea, acne vulgaris, prurigo and lupus are amenable to treatment by the rays. He regards removal, as far as possible, by surgical means as the proper treatment for epithelioma, but the use of the Roentgen rays should be considered in the after treatment.

Treatment of Acute Dysentery by Oxygenated Water.—According to Dr. Rocanz (*Med. Press*, Dec. 18, 1901), of the Children's Hospital at Bordeaux, oxygen water constitutes a valuable remedy in the dysenteric troubles of children. He had an opportunity of trying the agent in an epidemic of dysentery on a dozen children of from two to twelve years old. He employed the oxygenated water at twelve volumes, and diluted with five times its volume of warm, boiled water (oxygenated water, ℥ij; sterilized water, ℥x). The quantity of the liquid injected varied with the age of the patient, and also with the tolerance of the colon. In all the cases treated the state of the patients improved rapidly.

The Medical Treatment of Smallpox.—Dr. H. M. Bishop, in an article on "The Care and Cure of Smallpox" (*Pacific Coast Jour. of Hom.*, Sept., 1901), energetically opposes the prevalent idea among practitioners of the present day, that there is no curative treatment known to medical science for this malady, and no reliable means whatever of arresting its progress. Such a remedy he declares, does exist and has stood "the crucial test of years of repeated trial in controlling, curing and abbreviating all forms of this terrible disease." This remedy is variolinum. "Variolinum in the incubative stage, when a person has been exposed to the contagion; variolinum in the initial fever, 3 to 5 grains of the third trituration every two hours; variolinum in the eruptive stage, papular, vesicular or pustular; and I was about to say variolinum in the stage of secondary or suppurative fever; but, thank God, if the variolinum is given in the commencement and continued, your patient will be convalescent by the time the suppurative stage is due. I never yet, through considerable experience with the disease in upwards of a quarter of a century, have seen a case whose development was not

arrested by the time the variolinum had been given four or five days."

Among the many cases in which the writer has employed the specific, "with never a disappointment," he cites that of an infant, unvaccinated, with confluent smallpox, in which the variolinum was not begun with until the evening of the fifth day of attack. After the remedy had been given four days the pocks ceased to develop and recovery set in. The patient has remained well and robust. Conceding all reasonable claims to the influence of vaccination in modifying the disease, it has proved too disappointing, Dr. Bishop thinks, to hold the confidence of the searching intelligence of the twentieth century, especially when there is presented a substitute which only asks for a fair field to demonstrate its superiority in the management of smallpox and all the harassments that pertain thereto.

The *Medical Times and Hospital Gazette* lately made public a communication from Dr. Kamneff, of Melenki, medical officer, Government of Vladimir, Russia. He writes that it is surprising to him that he has never found a word as to the utility of ichthyol in the treatment of smallpox. In Russia about 50,000 men die every year of that disease. By reading the Russian medical journals it can be seen what a favorable result ichthyol produces in this frightful disease. He has used it, and, were it not for vaccination, he would say that in ichthyol we have a specific against smallpox. He employs it as an ointment with vaselin (1:5/8). Improvement commences at the end of the first day of treatment, the temperature falls, the pustules commence drying. The course of the malady is cut short, and, after convalescence, there remains no mark of pitting on the countenance. We have in ichthyol the best certain remedy against smallpox.

RETROSPECTIVE DIETETICS.

The Food in Infancy.—Joseph E. Winters, *Medical Record*, January 25, 1902, states that late weaning or continued milk diet causes anemia on account of the deficiency of iron in the food. The use of oatmeal is urged, and its richness in the constituents which are needed by the growing infant is emphasized. Milk, supplemented by cereal gruels, should constitute the child's food up to the end of the first year. At that time eggs should be added, because they contain much proteid, fat and mineral matter, especially lime, phosphoric acid and iron. To begin with, only a small portion of one egg should be given twice a week. Later this may be given two or three times a week. Dry bread may be used twice a day at this time.

At fifteen months fruit may be given. The author points out that he urges the use of food rich in proteids, fats, carbohydrates and mineral matters. This is necessary for fresh growth in the infant. Storing for future use is the paramount consideration. Food is stored for fresh growth in the child, whereas in the adult the only proces to be considered is that of repair.

For this reason earthy salts are needed in greater proportion than in the adult. Fat is essential in the child during the period of nerve and skeletal development. Carbohydrates are necessary on account of the demand for heat and energy and to protect the proteids and fats from oxidation.

No formation of tissue can take place without proteid. Nitrogenous matter is essential to every vital process; no cell growth can occur without it. Without it there is feebleness, pallor, and stunted, ill-developed bodies.

The author objects to the use of meat in early childhood except in sparing quantities, on the ground that it stimulates metabolic processes and prevents storing of tissue builders. Meaty diet creates a disrelish for the physiological foods of childhood, which he classes as cereals, vegetables, and milk.

The salts cannot be introduced in an assimilable form except in organic combination with an albuminous molecule. To provide the mineral constituents necessary for maintaining the relations of the fluids and for the growth of bone, muscles, etc., vegetables which obtain these elements direct from the soil should be consumed in liberal amounts.

Diet in Gastric Catarrh.—The regulation of the diet constitutes a most important matter in the treatment of gastric catarrh. Patients with catarrh of the stomach should never eat to satiety, but should cease at the first sensation of fulness. There should be sufficiently long and regular intervals between the meals. Beverages should be lukewarm, and strong alcoholic and carbonated drinks should be prohibited. Proper care of the teeth and sufficient mastication are essential. We forbid hard-boiled eggs, stringy meat and all meat and fish which are too fat. Soup from red meat is unsuitable, but this is less the case with clear bouillon from the flesh of fowls and veal. Unirritating and yet nourishing meat products are gelatinous soups and jellies and fat-sparing gelatin.

The manufactured foods, such as pepton preparations, nuttose, somatose, etc., can be used with advantage. In the other class of aliments stand the products containing carbohydrates—vegetables, fruits and legumens. Their digestion should take place easily under the given conditions, because in catarrh the HCl is lacking. All fresh bakery products are to be avoided.

Vegetables should be cooked in salted water without much fat. Those of the cabbage family are to be avoided. The same applies to the legumens. On the other hand, a good food, though when long continued not very acceptable, can be made from the so-called leguminous meals, which are now often to be had in the shops.

Milk, theoretically, should be the best food of all. It is, unfortunately, not tolerated by many, or can be taken only a short time. To live on milk alone requires a much larger quantity than the capacity of the human stomach permits. Still, milk, by adding the milk-powder, that is, milk evaporated and pulverized, gains a higher nutritive value.

Important as is a proper diet, equally important is it to return to the usual diet at the proper time. Most patients are, indeed, ready and eager to return too soon to their old diet. Still, there are those who by following out a restricted diet for an unnecessarily long time have been so weakened that their original gastritis has at last developed a nervous dyspepsia or a state of universal debility which can only be corrected by a positive change of regimen.

Diet in Eczema.—N. S. Davis, Jr., ("Dietotherapy," Cohen's System, Vol. 6; *Amer. Med.*), regards eczema as undoubtedly a disease excited by local irritation. It is most easily excited and most likely to be prolonged and severe when metabolism is disturbed. Eating and foods therefore play a part in causing and in prolonging it. It occurs frequently as a complication of diabetes, of a gouty or strumous tendency, and of Bright's disease. Dietetic treatment appropriate to these disorders is an important aid in the management of eczema. Whatever the condition of the patient may be

as regards flesh, the diet should be so adjusted as to prevent digestive disorders, and to avoid overworking the liver or surcharging the blood with effete matter. Food should, as a rule, be taken in moderate quantities. When eczema occurs, as it often does, in those who are stout, the diet should be simplified and flesh reduced. A milk diet for a few days, with gentle purgation, will help to make the gastrointestinal canal cleaner, will stimulate diuresis, and thus wash from the blood unwholesome ingredients. Even when two quarts are consumed in 24 hours, less nourishment will be taken than is habitual. Such a diet maintained for a few days and subsequently gradually modified, will lead to a diminution of flesh and to healthier metabolism. Fruits, the simple vegetables, bread, fish and eggs, may be used after the first few days, and the quantity of milk lessened. Red meats should be forbidden for a time and later used sparingly. Stout infants who suffer from eczema are sometimes benefited by simplifying the diet of the nurse. In bottle-fed babies too much farinaceous food and too much sugar are often harmful. The diet of the mother must be studied and prescribed carefully if she suckles the babe, and if she feeds it from a bottle care must be taken to adapt the food to the child's power to digest and assimilate.

Too little food, because of poverty, and lack of cleanliness are also causes of eczema. Many patients of this class are strumous as well. Sufficient food, well cooked, quickly causes stubborn eczema to disappear in such cases, in which cream, butter, olive oil and cod liver oil may also be given with great advantage. Every attempt should be made to improve nutrition.

In other cases it is necessary to forbid rich foods, fried food, especially sweet food and all other kinds tending to produce indigestion. The vegetables that are least digestible, such as cabbage, turnip, sweet potato and egg plant, must be forbidden; occasionally, also, oatmeal, bananas, peaches, pears and strawberries, and usually pork, "high" game, salt and smoked meats. In certain cases dyspepsia must be cured and diet that overloads the urine with phosphates, urates and oxalates must be corrected.

Buttermilk for Infant Feeding.—Demattos states that since De Jaeger recommended buttermilk as a food for infants, six years ago, it has become universally popular throughout Holland. It has been tentatively introduced into Germany during the past year and has already won high appreciation. When pure, fresh buttermilk can not be obtained, families churn a little butter at home to provide the babe with its buttermilk every day. It is prepared by stirring a level tablespoonful—about 10 to 12 gm.—of fine rice, wheat or other flour into a liter of buttermilk less than twenty-four hours old. It is then boiled over a moderate fire until it boils up thrice, stirring continuously, after which two or three heaped tablespoonfuls of cane or beet sugar are added. Five years of extensive experience with this régime have confirmed its remarkable value in cases of children who are not thriving on breast milk or artificial food and in desperate cases of all kinds.

Whey in Typhoid Fever.—Selby (*Lancet*, Nov. 2, 1901) advocates whey in the treatment of typhoid fever. Milk is not an appropriate food because (1) it forms hard cheesy curds in the stomach, and these curds passing along the intestines give pain, scraping the raw ulcers; (2) it evolves gas, causing perpetual distension of the bowels; (3) the bacillus typhosus breeds rapidly in milk.

The result of using whey has been a diminution of death rate from 15.5 to 2.7 per cent. A little tea, coffee, or cream may be added. For children, a little cochineal to color it pink. The quantity given varies from a pint and a half to six pints daily. Beef tea is occasionally added.

The most marked beneficial effects were shown by a clean mouth and tongue. The pulse rate diminishes encouragingly. Sweet whey, white of egg, and broth is the diet at Cork Street Fever Hospital, Dublin, and in fifteen years their death rate stands 7.5 per cent.

Purification of Drinking Water by Boiling.—Bizzozozero states, in a German periodical, that most people object to purifying water by boiling for various reasons. He gives the most important objections as follows:

(1) The water loses its air, and is not digestible.

(2) The water loses its free carbonic acid gas, which normally gives it a piquant taste.

(3) There is a loss of lime salts, which are necessary to our nutrition.

(4) Boiling gives water a specific unpleasant taste.

Bizzozozero takes up these objections one at a time. He shows that the air can easily be re-introduced into water after boiling merely by shaking it for a minute or two. He shows that the amount of carbonic acid gas normally present in drinking water is entirely too small to impart any taste at all to it. The lime salts in the water are quite unnecessary, as they are supplied better in the foods. He claims that no specific unpleasant taste occurs if the water is boiled in clean glass or enamelled ware receptacles and cooled off rapidly afterwards. He considers this the best all-round method for sterilizing drinking-water.

Raisins in the Treatment of Hyperacidity of the Urine.—Carles (*La Médecine Mod.*, Aug. 14, 1901) recommends the daily ingestion of four ounces of dry Malaga raisins in cases of hyperacidity of the urine. They should be eaten for dessert and between the two principal meals. This treatment is based upon the potassium bitartrate contained in the raisins, about 30 grains being present in four ounces of the fruit. The potassium bitartrate is changed into the alkaline potassium carbonate; this uniting with free uric acid forms soluble potassium urate which is neutral in reaction. In four cases of hyperacidity of the urine Carles obtained excellent results from this treatment.

How to Reduce the Waist.—To squeeze the waist into the smallest possible compass by tight lacing, says *Health*, is simply to ruin the figure irretrievably. The following series of easy gymnastic exercises, if persevered in regularly and consistently, will work wonders in the way of reducing its actual size: First, stand perfectly upright, with shoulders back, chin pressed well back, and arms at the sides, with palms of the hands to the front. Raise the arms over the top of the head till the thumbs touch, and then drop them down again. Second, hold the arms straight out in front of you, palms down, and then move each arm around gradually to the side and back again, keeping them on the level of the shoulders. Third, stand with the arms stretched as far apart as possible, level with the shoulders, and making a perfect cross with the body, and describe small circles with each arm, using the shoulder as centre. Repeat each exercise half a dozen times consecutively.

—Dr. Sherman claims to have treated chronic ulcers with kerosene, either pure or diluted with alcohol from 33 to 50 per cent., with most gratifying results.

MISCELLANY.

—Wounds giving off sanious discharges, when dressed with soft wilted cabbage leaves promptly take on healthy action and assume a better aspect.

—It is announced that Dr. Arsene D'Arsonval, of the Paris Academy of Sciences, has discovered a method of extracting from ordinary petroleum a liquid which does not freeze at a temperature of 200° below zero.

—To remove foreign bodies in the ear, the *Canadian Practitioner* recommends dipping the end of a camel's hair brush in glue and leaving it in position against the body. When dry after a few hours, pulling upon the brush will remove the whole thing.

—If iodoform gauze be saturated with a solution of the compound tincture of benzoin and applied in cases of foul-smelling cancers and open malignant ulcers, the odor which renders life a burden, both to the patient and attendants, will be completely destroyed.

—A young man calling on his sweetheart for the first time since her return from abroad, inquired about the pleasures of her sea voyage. "Were you sick both ways?" he asked, solicitously. "No; I only vomited," demurely replied the maiden.

—French savants report that alcohol makes the best bed for tuberculosis. The departments of France which are the greatest centres for tuberculosis are almost all those in which there is the greatest consumption of alcohol. Suppression of alcohol, says the *Medical Record*, should go hand in hand with that of tuberculosis.

—Dr. John P. Wood, the oldest practicing physician in the United States, has celebrated his 100th birthday. He was born in Dublin, January 4, 1802, and came to this country when small, graduating from Transylvania Medical College at Lexington, Ky., in 1824. He has been practising ever since. He was a surgeon in the Mexican war.

—At the bottom of the wonderful physical vitality of the Turkish race is the universal abstinence of the common people. They are the most abstemious race on the earth, and the healthiest. The soldiers, peasants, merchants and members of the learned professions never touch alcohol, although the upper classes in Constantinople drink considerably.

—A writer in the *International Journal of Surgery* protests against bolstering up the use of alcohol in surgery on the ground that it has a primary and a secondary action. No drug, he asserts, has two such opposite actions. "What is referred to as the secondary action of a drug is but the reaction of the organism through which the powers of life finally triumph over the effects of the foreign substance, or sink under the overwhelming force of its destructive influence."

—Miss Clara Schmat, daughter of Fred. Schmat, merchant in Atica, N. Y., gave an informal party on the evening of November 20th last. About thirty of her friends were invited. Among the refreshments served were tinned cans of oysters, which had been opened and allowed to stand for two days. Before midnight all of the guests were taken violently ill with ptomaine poisoning. Physicians worked all night, trying every means to counteract the poison, but Miss Schmat died early next morning, and Frank Harrison died two hours later.

—The Italian Government, it is reported, has accepted the offer of a German syndicate to drain the Pontine marshes in Latium, lying between the sea and the Volscian mountains, and extending 31 miles from Terracina to near Velletri and having a varying breadth of 6 to 11 miles. The reclaiming of these marshes will free Rome from malaria. The cost is estimated at $1,000,000.

—Ten drops each of chloroform and tincture aconite, mixed, and applied locally, will instantly relieve pain, especially of sciatica, and this disease, it is claimed, if treated thus two or three times a week will soon cease to return.

—Dr. Herman Knapp, the distinguished ophthalmologist of the College of Physicians and Surgeons, celebrated his seventieth birthday recently. At his suggestion the New York Ophthalmic and Aural Institute, of which he was the founder, is to be removed and equipped after modern methods. The trustees have already subscribed $100,000 for this purpose, and about $400,000 more are needed to build the new institute.

—A simple bedside test for albumin is that of Bychowst (*D. Med. Woch.*): Put one or two drops of urine into a glass of clear hot water and albumin is indicated by an opalescence. If the glass is held against a dark background this opalescence is very visible and is seen to spread through the fluid like a cloud of smoke. The phosphates produce the same phenomenon, but on the addition of a little acetic acid the cloud immediately disappears.

—The articles of incorporation of New York Red Cross Hospital, approved recently by the State Board of Charities, contains the following sentence: "Alcohol, as alcohol, or in any of its forms, shall never be used in the said hospital for internal medication or as a beverage." The incorporators of the hospital are: William T. Wardwell, President; John S. Huyler, Dr. A. Monae Lesser, Bettina H. Lesser, Allen Wardwell, Orleans Longacre, John P. Faure, Edward R. Johnes, Max W. Kraus, Alfred L. Mamiere and William A. Gans.

—In the Orphans' Court, Pittsburg, Pa., Dr. J. O. Flower filed suit against the estate of the late H. M. Curry for $5,243, for professional services. Mr. Curry was one of the partners of the Carnegie Steel Company, and died two years ago. The physician's services covered a period of about five months. He claims that he treated Mr. Curry so successfully that the latter's life was prolonged sufficiently to add at least $1,000,000 to the estate. Expert witnesses upheld the doctor in his suit.

—Benedict Joseph Labre, who lived in the eighteenth century, and was canonized in 1860, is recorded to have made of his whole person a strict preserve of parasites. His love of God's creatures made him shrink from shedding their blood; so careful indeed was he of their well-being, that if perchance he found any straying in barren places, he would tenderly carry them to the rich pastures of his skin. If the antivivisectionists want a patron saint they cannot find one more appropriate from their own point of view than this thorough-going zoophilist.

—Frank E. Simpson (*Amer. Med.*) makes the following suggestions to anesthetizers: (1) Give the patient your undivided attention; (2) administer the anesthetic slowly; (3) keep the patient's lower jaw forward; (4) observe extreme caution (especially in chloroform administration) when the stage of unconsciousness is at hand; (5) during deep anesthesia watch particularly the respiration, but also the pulse, eye, and color; (6) the rolling of the eyeball from side to side is the first and most easily observed indication of returning consciousness.

ORIGINAL ARTICLES.

RENAL CASTS IN THE URINE.

BY W. STORM WHITE, B.S., M.D., NEW YORK.

AFTER many years of laboratory work in the line of urinary analysis and its positive findings, from over 17,000 cases, I wish to present to the profession at large a simple guide to the lines of investigation which should be followed in certain lesions of the kidneys as are suggested by the various casts found in the sediment. Of course we must make careful macroscopic, chemical and microscopic examinations—the first two we will suppose, for our present purpose, to have been made and duly recorded, allowing to all factors their due significances.

In cases of even slight albuminurias we must search most carefully for certain more or less cylindrical or rod-like bodies known as casts, cylinders or tubules, etc., found in the urinary sediment. Presupposing that these are perfectly familiar to us all and practically recognized under the microscope, let us proceed to their collection for actual examination. After receiving the sample, prepared according to the instructions of the physician (i.e., the total quantity for 24 hours, or a mixture of the last passed at night and the first in the morning, or the latter two in separate bottles, and a statement of total diurnal amount) allow to stand perfectly stationary for at least six to eight hours in order to obtain the necessary precipitation, because many of the casts are of so nearly the same density or specific gravity of the urine itself that a long time is required for their collection at the bottom of whatever vessel we may employ. The sediment will be observed arranged in illy defined strata, and the better plan is to allow this sedimentation to occur in the receptacle in which received.

Using the medium-sized glass tube or pipette, a few drops may be easily withdrawn from any given stratum by grasping the tube between the thumb and second finger ,pressing the index finger over the open upper end. Immerse the tube to the required depth, allow a small quantity to enter by slighty raising the index finger, close down tight and remove the tube. Carefully wipe the external surface and allow one or two drops to escape free. Flow a drop upon a *perfectly clean new* slide or glass slip, which should have been previously thoroughly washed in alcohol, and cover with a coverglass similarly treated. Many practical examiners dispense with this cover and the foregoing precautions, but too much care cannot be taken in these particulars, as I have seen grave errors by neglecting so-called minor details and they are of paramount importance in the practical work of the finding of casts. The ordinary laws of optics will show the necessity of the coverglass in producing a uniform fluid stratum and not a plano-convex lenticular substance in or through which to view our object. Also the tube of the microscope should always be perfectly perpendicular, as the heavier elements of the sediment will naturally go to the lower point if the stage is inclined and thus escape notice. As the casts themselves are not of the same gravity and therefore may not be found in the same level, we must not rely upon a single slide, although we may have enough to make a rough estimate there will be cases where mistaken diagnoses result, viz: fatty, hyaline, and granulo-hyaline will be found very perceptibly higher up than epithelial, hemorrhagic (blood) or uric acid casts. In the collection of the sediment, I like the "Centrifuge" for *everything excepting casts, what may be mistaken for them or minute, incipient (forming) calculi.* If worked by water or other power it would be all right, crudely, for crystals, etc., if the process be sufficiently prolonged, from 5 to 10 minutes, but if one has to make a number of examinations this takes too much exertion by hand, and in the case of renal casts is open to very great condemnation, as by experience I long ago discovered that the more delicate forms were not only fractured, but actually disintegrated, past all recognition for careful differential diagnosis. In several cases, I have noticed after centrifugalization that certain crystals and amorphous substances (such as uric acid, oxalate of lime, urates and even phosphates) will assume cylindrical forms simulating casts, because not only of the rotary motion but also of the rapid precipitation. The same holds good for the agglomeration of crystals from the same causes, and in the above cases the normal sedimentation often disproves the findings. I do not wish it to be understood that this instrument has not its uses, as it is invaluable in the precipitation of the more stable (tough) elements of the urine, but as I am only dealing with "casts," the opinion must be given. According to the following table, there can be distinguished some twenty forms of casts and twenty-two diseases affecting the kidneys. There are other cylinders, etc., frequently seen, but they come from the bladder or genitals and have no place here.

The simple amount in the natural fluid (urine) *with oblique transmitted light is the only one of value,* unless we resort to staining, and in the latter case there are sources of error. Some of the casts will not take on the ordinary coloring matters (such as carmine, eosin, hematoxylin, etc.), and by lack of results again error.

By compilations from such authorities as Mitchell, Auspitz, Ultzmann, etc., and confirmations and additions from my own experience I give the following chart or table:

There are very few conditions in which many of these forms appear at one time, but after due classification they can be grouped as uniformly occurring in certain diseases with more or less regularity. By consulting the above table, much perplexity and unnecessary work may be obviated. Taking only a few examples; suppose one of the sequelæ of scarlatina, the urine becomes scanty (from 400 to 600 c.c. for 24 hours, or even less), specific gravity from 1028 to 1038, color dark or sometimes "dish-water," amorphous urates and phosphates in large quantity, albumin 2 to 3 per cent. (by weight, not bulk), nuclear albumin present, etc., and we discover microscopically large numbers of epitheliogranular casts as well as varying numbers of micrococcial, hyaline, mucus and nucleated. We make the diagnosis of Post scarlatinal nephritis, as found under the heading of "Catarrhal." In the last stage of nephritis parenchymatosa chronica we will find mucus, hyaline, epithilial, coarse granular, waxy, fatty, corkscrew and sometimes even tubules and glomeruli.

Fibrinous casts are noted, but there has always been a doubt in my mind not only as their structure but also of their origin, as they are often seen in the urine where there is absolutely no possibility of renal affection, they may come from the bladder or elsewhere and may be easily mistaken for hyaline, although their refractive index is much higher. Carmine (borax) or eosin *may* make the differentiation but in the case of the former the doubts as to structure still holds and, in both, the origin. There are certain exceptions to be made regarding this last statement in connection with acute parenchymatous nephritis, small white kidney,

DISEASES. (NEPHRITIC.) By W. STORM WHITE, BS., M.D. New York	Varieties of Casts.	Mucus.	Hyaline.	Granulo-hyaline.	Hæmato-hyaline.	Granular.	Epithelio-granular.	Epithelial.	Granulo-epithelial.	Waxy.	Fibrinous.	Blood.	Fatty.	Uratic.	Micrococcial.	Tubules, etc.	Pus.	Yellow.	Nucleated.	Cork-screw.	Epithelio-hyaline.
Catarrhal.			X				XX								X				X		X
Acute parenchymatous.			X/XX			X/XX		X/XX			X		X		X	X/XX					
Acute diffuse.			X			X		X				X									
Chronic parenchymatous.			X/X			X/XX		X		X			X			X?				X	
Chronic parenchymatous, of pregnancy.			X/X			X/XX		X		X			X							X	
Chronic diabetic.			X			X							X								
Large white kidney. (with slight nephritis interstitialis)			X									XX	X								
Small white. (with marked nephritis interstitialis.)			X										X								
Small white. (with all parts equally affected).			X	X	X	?	X	X	X	X	X		X					X	X	X	X
Acute interstitial.			X/?																	X	
Chronic interstitial			X							X										X	
Gouty nephritis.			X											X						X	
Waxy kidney.			X			XX		X		XX											
Acute congestion.			?									?		X							
Chronic congestion.			X					X				?									
Suppuration in the kidney.			?	?	?	?	?	?	?	?	?	?	?	?	?	X	XX	?	?	?	?
Hæmaturia renalis.											X	XX									
Pyelo-nephritis.			X	X	X	X	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X
Suppurative nephritis			X	X	X	X	X	X	X	X	X	X	X	O	X	X	X	X	X	X	X
Pyelitis			X														X/XX				
Chronic heart trouble			Nearly every kind, depending on the secondary lesion in the kidney.																		

In all forms disease of the kidneys and bladder

X — present.
XX — present in large quantity.
X/XX — present or in large quantity according to case.
X — absent or present.
? — doubtful or questioned by authorities.
o — none.

hematuria renalis, pyelo-nephritis, suppurative nephritis, or nephritic abscess, where the lesion can be located by other data. In these, we call them "fibrinous," and *probably correctly*. Under the heading of chronic heart trouble may also be included lesions of the stomach, liver and other vital organs. In diabetic

subjects, aside from the *constant presence of sugar or its alternation with the oxalate of lime*, the character of casts has very little weight, as I consider them as merely functional deviations due more to general disturbance than initial trouble with the kidney itself, and therefore only indicating nephritis when long continued or chronic.

Under pyelo-nephritis we note all kinds of casts excepting uratic, but since compiling the chart, I have seen even them, where only one kidney is diseased, or a gouty condition present in the other.

A CONTRIBUTION TO THE STUDY OF HERPES PROGENITALIS.

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PART I.

THE etiology of herpes progenitalis is as variable and manifold as that of psoriasis. The treatment heretofore instituted has been purely empirical, for there was no rationale upon which to base our therapy. It is in the opinion of the writer, that a systematic classification of the causative factors underlying this malady would materially contribute to a more lucid understanding of the affection, and would also be conducive to a more rational mode of treatment.

In the subjoined paragraphs, the author will endeavor to acquaint the reader with the etiology of the above dermatosis, its symptomatology and the differentiation from other morbid lesions closely simulating the subject under consideration; succeeded by a brief discussion of the pathologic anatomy and an outline of the manner and mode of therapeusis in conformity with the causative agencies productive of an attack of herpes progenitalis.

Before entering the subject proper, however, it may not be amiss to state, that herpes progenitalis may involve any or all of the following regions:

(1) The inguino-crural fold and the lower third of the hypogastric area, together with the upper third of the inner aspect of the thigh.

(2) The integument of the penis, the prepuce, the glans and its sulcus, and the integument of the scrotum.

(3) The perineal region to within one-half an inch of the anus, the ischio-rectal space and the lower gluteal area.

In dermatologic practice we are able to discern two chief varieties of herpes progenitalis, *viz*:

(1) That due to a peripheral neuritis with preceding or complementing subjective symptoms, as dermatalgia and pruritus.

(2) That due to a vaso-motor paralysis with less marked subjectivity and characterized by dilatation of the capillaries supplying a particular region of the urogenital tract.

These two main forms may be brought about by any of the following causes:

(*a*) Neuroses of an hereditary type.

(*b*) Debilitating diseases—especially the infectious and exanthemata—may leave in their wake a depraved condition of the economy, favoring the frequent occurrence of herpes progenitalis; to this category also belong the divers pathologic states of the blood, as anæmia, chlorosis, hydræmia, uræmia, etc.

(*c*) Autotoxemia, due to gastro-intestinal derangements and the ingestion of unwholesome, indigestible and obnoxious articles of food.

(*d*) Drug intoxications, notably those of the salts of metals, as mercury, silver, lead, zinc, and the various compounds of iodin; the continuous use of some of the active alkaloids and the habitual inbibition of malt liquors and alcoholic beverages.

(*e*) Senile degeneration, predilectively invading the peripheral nerve filaments of the cutaneous surface, is a very potent cause in the production of herpes.

(*f*) Neuroses and psychoses acquired post-natally and during adolescence; neuropathologic states of the central and sympathetic nervous system, and the peripheral nerve structures.

(*g*) The different dyscrasiæ and cachaxiæ, to-wit: syphilis, tuberculosis, malaria, the uric and lactic acid diathesis, scurvy, and not infrequently leprosy. (Cases are on record of the repeated occurrence of herpes progenitalis in leprotics.)

(*h*) Local conditions:

Among these may be enumerated the folowing: an elongated and constricted prepuce, the bacillus smegmæ, irritating discharges from the genital tract, especially gonorrheal secretion, and that caused by chancroids and vegetations; the menstrual flow, vaginal discharges due to uncleanliness, specific causes or to the trichomaines vaginalis.

(*i*) Over excitation of the glans penis and prepuce through excess in venery or by manustupration.

(*j*) A peculiar darthic diathesis or predisposition on the part of the individual to the affection under discussion, with or without participation of any of the above etiologic factors, as evidenced by recurrent outbreaks of herpes progenitalis.

(*k*) Reflexly, by oxyuris vermicularis and ascaris lumbricoides, prostatism, sexual neurasthenia, spermatorrhea, prostatorrhea, etc. It may be remarked right here that children are by no means exempt from progenital herpes, judging from quite a number of cases observed in Children's Homes.

(*l*) And last but not least, a special bacillus has been attributed with the pathogenesis of the eruption.

But little can be said of the symptomatology of this affection, for in no disease do we find so well marked characteristic as in urogenital herpes. Few points, however, must always be borne in mind upon entering a conclusive diagnosis, *viz*:

(1) The *grouping* and *concentricity* of the lesions.

(2) The *subjective symptoms*, which almost always precede or accompany them, at least so in 75 per cent. of all cases.

The most significant and important features in the diagnosis may be formulated as follows:

(1) *The multiplicity and grouping of the lesions*, i.e., we commonly encounter a number of vesicles arranged in a circular or semi-circular manner, usually situated upon the distribution of the peripheral nerve filaments. More than one group can in the majority of cases be detected.

(2) The presence at some time during the course of the dermatosis of pruritus and pain.

(3) The indefinite period of incubation which differentiates it from the simple multiple chancroid, which period of incubation never exceeds ten days.

(4) The absence of induration or cartilaginous thickening at the margin or border of the individual group or circle—thus eliminating the probability of an initial sclerosis.

(5) The lesions are destitute of any moisture, unless the vesicles have been irritated or have ruptured spon-

taneously or accidentally, when it assumes a serous, or if infected, a purulent secretion.

(6) The lesions become covered with crusts soon after the absorption of the serum in the vesicles, a state of affairs, seldom, if ever, exhibited by the chancroid.

Resolution of the vesicles is accomplished within six to ten days after their appearance, leaving behind a pinkish area, which soon fades, however, the skin returning to its normal color devoid of any stigmata to mark the former site of the original lesion.

These few diagnostic points should amply suffice—the writer has reason to believe—to establish a correct diagnosis and serve to eliminate the possible existence of other lesions, with which herpes progenitalis may erroneously be confounded. It is obvious that a tabulation of the differential points relative to the chancroid, the initial scleroma, and preputial vegetations, would be unnecessary and superfluous, provided the above features of the affection be kept in mind.

MORBID ANATOMY.

Whatever the cause of herpes progenitalis be, either one of the following two chief pathologic states of the peripheral nerve endings supplying the uro-genital tract, are apt to be present, namely: a *peripheral neuritis*, or a local *vaso-motor paralysis*. The former condition is in almost every instance followed sooner or later by the latter. The inflammation takes place in the epineurium, compressing the neural cells or parenchyma to such an extent as to induce a curtailment in the conductibility of the nerve current. The nervi vasorum, deprived of their functional activity, engender trophic disturbances in the tunic of the capillaries, which soon becomes manifested by a diapedesis and exudation of serum between the cutis vera and the layers of the epidermis, resulting into the formation of vesicles. Absorption of the serum exudate and inflammatory deposit of the nerve sheath takes place within six to ten days, when the regions involved are brought to a restitution ad integrum.

French dermatologists have detected pigment crystals, resembling indican within the epineural covering; these pigments are probably due to a retrogression or decomposition of the blood coloring matter, which was transfused during the process of chemotaxis.

EXCESSIVE VARICES OF BOTH LOWER EXTREMITIES CAUSED PROBABLY BY WEAKNESS OF THE VEIN-WALLS.

BY H. O. SOMMER, M.D., WASHINGTON, D. C.

THE depicted case of phlebectasy came under my observation in New York through the courtesy of Dr. Peck of Scranton, Pa.* The patient, being an old charity hospital visitor, had no doubt been passed along by many of the New York surgical lights as irremediable, which is no doubt correct, as any radical treatment would necessitate the excision or ligation of nearly all the superficial veins of both thighs and both legs—and hence not to be considered—so extensive was the disease.

The case is worthy of consideration as showing to what degree neglected varicose veins may develop and at the same time showing to what degree they can develop without bursting from sheer blood pressure or complication with phlebitis. The phlebectasies—as I believe, is shown in spite of the poor photograph—by undulations even to the crotch, completely covered both lower extremities not only in front as per cut but in the rear as well. Convoluted blood sinuses (Ziegler) were sufficiently present, as shown by the photograph, near the ankles, but the predominant feature was the multiplicity of rather broad and flat dilatations which converted the surfaces of both lower extremities into a mass of waves.

Although the condition had been present for years, there was neither edema nor ulceration present, the skin being characterized by dryness and looseness, as if being held from abundant nourishment by the undermining influence of the varicosities.

The zig-zag contour of the left leg's and thigh's inner side aids somewhat, in spite of the flatness of the print, in indicating the extent of the disease. Though I have a good wood cut in a standard German work I prefer not to sacrifice the undulating characteristic shown by my photograph even to a more distinct but perhaps misleading diagrammatic representation of the tortuosities and hence as well as for authenticity's sake submit the print.

Pathology: I believe that the preponderance of flat,

sinus-like tortuosities over uniform cylindrical dilatations, as well as the absence of a determinable cause of obstruction speaks for an abnormal weakness of the veins (Ziegler) or compensatory elasticity. The absence of distinct varicosity of the external and internal saphenous trunks, of which I have seen beautiful types, especially in Germany, also supports the explanation, the smaller branches being chiefly affected.

As illustrations of cases of such extensive character are missing in some of our principal surgical works, I feel justified in publishing the photograph, especially since, while I have no doubt such cases are occasionally observed, and the literature in varicosities in the Index Catalogue is large, the cases for the whole lower extremity are comparatively scarce.

* Service of Dr. Bagg. Metropolitan Hospital, N. Y.

—As to how salt came to be used, we are told in the *Domestic Science Monthly* that it is probable when the human family took to flesh-eating an antiseptic was necessary to preserve the meat. Salt kept it from decaying, and vegetables cooked with it acquired a salty taste, so the palate soon adapted itself to the use of salt in vegetable foods. Then it was but a step to add this condiment in cooking grain preparations. Fruits are never eaten with salt; it spoils their flavor. Some savages do not use salt at all.

THE TRAVELING OF CONSUMPTIVES.

BY A. L. BENEDICT, M.D., BUFFALO.

DURING the last twelve years, the writer has, editorially or over his signature, presented to the medical profession several communications, as well as a few to the scientific public, all advocating the management of tuberculosis as a contagious disease. It should also be stated that the present article is in line with the recent pitting of arguments between phthisiophobes, as we are called by our antagonists, and the opposite school so ably marshaled by Dr. S. A. Knopf of New York, who regard the bacillus tuberculosis as a theory and not a condition.

There probably exist, physicians who have never accepted the germ theory of disease but, until some very definite proof is submitted that what we have stained and bred as the bacillus tuberculosis is an ocular illusion or a harmless parasite or until elaborate biologic studies have been carried out to demonstrate that the bacillus tuberculosis must pass through a life cycle before it can again invade animal tissues, the position of phthisiophobia is the only logical one. By sheer force of personality and eloquence of debate, the men who consider the infectiousness of tuberculosis as a negligible factor, have exerted so much influence on the general professional opinion that they must be met with active argument, just as conservative gastro-enterologists had to disprove and not merely wait for proof of Boas's statement that lactic acid formation in the stomach was practically pathognomonic of cancer. If we phthisiophobes are wrong, we shall have caused unnecessary trouble to sanitarians and some personal inconvenience and mental suffering to consumptives; if the opposite school are wrong, they will have furthered the spread of a disease which already causes the death of about a fifth of all persons who do not die of traumatism and the asthenia of infancy and old age.

The whole matter of the traveling of consumptives has recently been brought before the attention of the profession by the ruling of the U. S. Marine-Hospital Service, that consumption is a "dangerously communicable" disease, by the legislative efforts of certain States or localities to restrict the establishment of sanitariums and the entry of consumptives from without, and by the action of certain railroads tending toward the use of special cars for consumptives. In this discussion, it must be borne in mind that, so far as legal enactment or practical sanitation is concerned, a person is tubercular only when actually discharging tubercle bacilli from the lungs, an open abscess or ulcer or by other obvious routes.

Let us consider the matter first from the standpoint of the authorities who deal with immigrants. Is consumption a dangerously communicable disease? We must agree with our opponents that, so far as casual meeting is concerned, it is not especially contagious. But a slightly communicable dangerous disease, is much more serious from the sanitary standpoint than a markedly communicable trivial disease. Scarlet fever is extremely communicable to one who has not had it, but all semelincident diseases are nearly so in the literal sense. So far as any group of adults is concerned, any exanthematous disease of childhood might be considered as not "dangerously communicable," but even if the primary circle of contact received little damage, the indirect transmission of bacteria would result most disastrously. Smallpox is a disease against which we have almost an absolute protection; it is so rare that many practitioners of long experience, not directly connected with health boards, have never seen a case, and it is not much more fatal than the average infectious disease. Yet who would raise his voice against the elaborate and costly means of prophylaxis against this disease to which only the ignorant and obstinate, and about one in a hundred thousand of the intelligent and careful, are liable? It may very well be that there is not one chance in a million of my—or your—"catching" tuberculosis from meeting a consumptive but, in the long run, our chances are just about one in nine that we will not be burned to death, drowned, hanged, shot, or meet death by any accident or disease whatever, with the exception of tuberculosis. The only excuse for neglecting every possible precaution against this particular germ disease which kills more human beings than any other, is the pessimistic view that its bacilli are so ubiquitous that we can produce nothing tangible in the way of prophylactic results. But it is too late in the world's history to make such a *laisser aller* policy the excuse for any neglect of any form of betterment of human conditions.

Dr. S. A. Knopf places the exclusion of tubercular immigrants on the basis of social economics. He would exclude all immigrants that are paupers or obviously liable to become so. There can be no difference of opinion on this point, except by the unwisely sympathetic. But there is an immense difference between us in our conception of the economics of this problem. I am absolutely devoid of race prejudice, except that I believe that an Irishman is better than a German in Ireland, a German better than an Irishman in Germany, and so on. We have nothing that can be termed a race in America, and there is no such intrinsic difference of qualities among the civilized Caucasians as to warrant anything like know-nothing doctrine. But we must recognize the fact, that with very few exceptions, there has been no religious or political principle to attract the more recent immigration to America and, speaking broadly, any part of any community which is dissatisfied with its home, is inferior to that which is willing to remain. We must, therefore, as a matter of common protection and without regard to when or whence we came to the United States, exercise some restriction on immigration. We need no more people here, unless those of unusual attainments and we should feel perfectly at liberty to exclude those who are or who may be a menace to us in any way whatever. It is simply a matter of experience and of statistics that the vast majority of our imigrants have but little capital between themselves and a state of dependence. In a large proportion of instances, sickness, insanity or any other form of disablement, even temporary, renders these persons public charges. To admit a person suffering with a disease which is usually fatal, even if he is a member of a capable family, simply invites public expense. Considering the matter aside from the economic standpoint, it seems to me unwise to allow the importation of disease germs, especially in a fertile culture medium from which we cannot control their dissemination, on the ground of sentiment. I will grant that there may be individual foreign consumptives who will be extremely careful to avoid infection and whose mental attainments or material wealth may offset the negative value of their disease, when we consider that tubercle bacilli are already widely distributed. But such cases are rare exceptions, and our laws must be made to apply to the rule, not to the exception. The average tubercular immigrant is, beyond dispute, liable to become a public charge and almost certain to be compelled to live in crowded surroundings, which make

his own destiny almost hopeless and which favor the infection of fomites in houses imperfectly ventilated and exposed to little sunshine and into which, with imperfect modes of disinfection, successive tenants of low resisting powers, will come in large numbers. Of course, if there is no such thing as a tubercle bacillus, or if it is not the essential pathogenic element of tuberculosis, this argument, as well as all others for the prophylaxis of tuberculosis on an infectious basis, must fall, but with our present knowledge, it is not only a wise selfishness but the most far-seeing philanthropy to exclude tuberculosis at the confines of our country.

Dr. Knopf has called attention to the fact that the present ruling with regard to tuberculous immigrants may call forth retaliatory legislation on the part of other countries. Except by crossing the whim of a few wealthy American consumptives, such retaliation would be a most desirable result. We have unoccupied territory admirably adapted to the climatic treatment of tuberculosis, and large areas in which incipient consumptives may become healthy members of an active population. Not one consumptive in a thousand can go from America to the Mediterranean resorts, and it would be far better for the general welfare if the infection of steamers and the deportation of large amounts of money could be prevented.

Various experiments on a large scale seem to have demonstrated that the chief element in the "climatic" treatment of consumption, is not the temperature, atmospheric moisture, amount of sunshine, etc., or altitude, but mere rest or mild exercise out doors. At the same time, some climates are specifically beneficial, notably those of even temperature and relative dryness, with plenty of ozone and sunshine. On the whole, it seems that moderate altitude and temperature are more favorable to continued health and resumption of active life than high altitude and cold.

Local efforts at the restriction of a floating population of consumptives, are natural results of the general teaching that tuberculosis has a living, transmissible cause. The contagiousness, in the limited sense, of this or any other disease, has nothing to do with the sanitary aspect of such legislation or attempted legislation. If there is such a thing as the bacillus tuberculosis which will infect one individual after leaving another, it makes no difference whether actual contact or ordinary personal association has a marked influence on its transmission or not—some one is bound to suffer if fomites are established.

Some reasonable compromise must be made between local and general interests, and the self-interest of business institutions for the care of invalids will prevent any injustice to the consumptive. At the same time, the invasion of a permanent point of human occupancy by a company which seeks only its own financial welfare, which can offer no special climatic advantage, and which must inevitably result in cheap imitations by ordinary boarding-houses and the infection of the village or city as a whole, is a matter which requires local legislation for local interests, and we may be sure that no harm will result to the consumptive class. All sanitariums for this purpose should be isolated and should be located and controlled by State license. A national license in this, as in most other matters, would be superior, but unfortunately we still cling to the ancient theory of a confederation of sovereign states. When we reach the point of being one country, I believe there is every hope that a system of isolation hospitals can be carried out that will practically exterminate tuberculosis within a generation.

Whatever may be said about the non-infectiousness of a tuberculous individual who is conscientious and intelligent, it is scarcely possible for him to avoid being a source of danger while traveling. Like every one else, he is liable to intercurrent sicknesses that render him unable to be careful, and it is practically impossible to arrange for the disinfection of sputum, fæces, cuspidores, towels, handkerchiefs and bedding on trains and boats. From the standpoint of his own welfare, railroad traveling is too dusty, and subject to too great changes of temperature, too much nervous fatigue and too little opportunity for care in dietetics, to be desirable, except as a means of reaching his destination. Enough has been said by various writers regarding the futility and cruelty of arousing false hopes of climatic benefit in the minds of advanced consumptives. The principle should be carried out in all cases, to place the consumptive in a position of comparative isolation, in as perfect a climate as possible, and to keep him there till well or until death supervenes.

Until tuberculosis has been demonstrated to be a constitutional and not an infectious disease, the provision of special cars for travel, is a wise one.

I can not forbear touching upon the general, underlying principles upon which all details of the prophylaxis of tuberculosis depend.

1. The main issue, so far as any controversy is concerned, is as to the infectious nature of tuberculosis. All scientific authority, at present, teaches the existence of the tubercle bacillus and its ability to become infectious immediately upon being implanted in a tissue that is not especially resisting. There is no semelincidence or recognizable immunity.

2. From the sanitary standpoint, it makes no difference whether ordinary contact and atmospheric radiation from a patient is liable to produce this or any other germ disease. "Contagion," as opposed to non-contagious infection is purely a distinction of clinical convenience except in regard to gonorrhea and possibly a very few other infections to which very definite and easily avoidable modes of implantation are necessary.

3. Under present teachings, the only possible excuse for neglecting precautions against the spread of tuberculosis, is its ubiquity, but this is the best possible reason for doing our utmost toward its control.

4. The methods feasible at present, not to mention attempts at controlling animal tuberculosis, are:

(a) The exclusion of all alien tuberculous individuals.

(b) The forced seggregation of tuberculous paupers.

(c) Restriction of sanitariums for advanced cases to non-populous localities.

(d) Provision of special sleeping-cars and portions of steamers on all routes frequented by consumptives.

(e) The securing of voluntary seggregation of non-pauper consumptives, so far as our influence can reach.

(f) Systematic enforcement of ordinances forbidding expectoration and requiring municipal disinfection of infected houses, embalming or cremation of corpses, etc.

—It is stated that Mr. Low, the present holder of the Craggs Scholarship at the London School of Tropical Medicine, has proved that elephantiasis, which is spread through the agency of the mosquito, is not caused, as has been supposed, by drinking water polluted by the dead bodies of infected mosquitoes, but by the bite of mosquitoes, and immunity can, therefore, be secured by avoiding the bite of this pest. This will be welcome news to the natives of countries lying in the zone of the mosquito, where elephantiasis is most common, though it is rarely contracted by Europeans.

THE GENERAL PRACTITIONER AND DISEASES OF THE EAR.

BY M. E. FITCH, M.D., PHILADELPHIA.

IT is a curious fact and one not very much emphasized that deaf mutes have never become very much distinguished in science, art or literature. The records show that while the blind have become quite well known in various lines of work the deaf mute has gained very little prominence. In fact, in literature it is said that there is only one congenitally deaf mute, Bertier of Paris, who has acquired any distinction; and, it is thought that the life of the deaf is more cheerless than that of the blind. For while what is glorious in the external world is hidden from the blind, the deaf are deprived from that greater charm, the enjoyment of social life.

Deaf mutism should not be regarded as a disease any more than dropsy is a disease or a rise in temperature. It is simply a symptom of an existing disease or its sequal. As a rule the organs of phonation and articulation are normal in deaf mutes, their inability to speak being the result of their deafness. However, much progress has been made in teaching deaf mutes so that much of the loss which comes from deafness can be removed. It is reported that in the schools where deaf mutes are taught that they become so expert in the reading of the lips that they can read even a whisper or the mutterings of their teacher. When the deafness is caused by arrest of development due to congenital causes, there is no possibility of the case being improved. But in other circumstances the deafness and the loss of speech which depends upon it can be remedied.

It is frequently a difficult thing to determine how deaf a child really is, and parents are apt to deceive themselves in the vain hope that because a child can murmur a few words, such as Mamma or Papa, that it is really able to hear, when in reality these words have been acquired by simply watching the lips move. It must also be remembered that deaf mutes are susceptible to vibrations, and that slamming a door, or a disturbance of the atmosphere may attract their attention. Therefore, physicians should not exhibit indifference when called upon to treat ear cases. But undoubtedly the simpler forms of ear trouble can be properly handled by the general practitioner just as he protects and cares for the eyes of the young without being in any way an occulist.

A well-known authority on ear troubles has stated that probably twenty per cent. of school children are unable to write dictations correctly when the teacher speaks in a high tone of voice at a distance of twenty-five feet. This reveals an alarming affliction to which proper attention has not been given yet. It is the habit to regard earache as a trivial affection, and the family physician to prescribe some local anodyne—usually laudanum and glycerine—with the comforting assurance that all will be right in a day or so. If this does not relieve suffering, the physician frequently stands helplessly by, without making any attempt to explore the cavities of the ear and nose to learn the cause of the pain, and yet it is true that few diseased conditions of childhood are more common and fewer diseases of childhood are apt to have more distressing symptoms or followed by more unpleasant complications. There are few diseases accompanied by greater suffering than earache. The pain is agonizing and frequently intolerable, and if not properly treated it may go on to suppuration in the middle ear, perforation and destruction of the tympanic membrane, with partial or total loss of hearing; or the inflammation may extend to the mastoid cells or to the brain even causing death. Early proper treatment in acute catarrhal inflammations of the middle ear and Eustachian tubes will prevent a great many cases of partial or total deafness, or even deaths from mastoid disease. The proper treatment of painful ear affections is of as great importance to all practitioners as it is to ear specialists.

While a general practitioner is not expected to be a competent otologist, he should be able to make an examination and direct the management of these painful affections of the ear. A pain in the throat, chest or abdomen calls for examination; no competent physicians would think of prescribing an anodyne and dismissing. More important it is to make a thorough examination of the ear and locate the cause of an earache. For this purpose every physician should equip himself with a head mirror and several ear and nasal speculums, and learn to use them properly.

To insert an ear speculum and illuminate the external auditory canal is not a difficult procedure. Any physician should be able to make an inspection of the auditory canal and tympanic membrane. Reflected light from an ordinary lamp or gas jet is enough or on clear days reflected daylight from a window is sufficient. Apply the golden rule of medicine, "Remove the cause and put the parts to rest," and to do this, first find the cause. To prescribe anodyne drops or oil to be dropped into the ear to relieve an earache, caused by a foreign body or wax impaction is wretched, but worse is it to send the patient to some specialist, when a simple inspection with a mirror and speculum would have revealed the cause of the pain and enabled the family physician to cure it.

When such a patient appears with the history of an earache, the folowing internal quizzing is excellent. Is it in the external auditory canal? Is it middle ear disease or Eustachian stenosis or is it a reflex pain, due to dental caries or neuralgia.

Neuralgia of the ear is not a common symptom. Such a diagnosis should only be made after a thorough examination and exclusion of all inflammatory lesions and reflex conditions. The commonest causes of earache in the external ear are the presence of foreign bodies—animate and inanimate—such as beans, beads, insects or impactions of wax. When a foreign body is found in the ear causing pain, the proper treatment consists of the removal of the object. The injury following the insertion of a foreign body in the ear, has not been caused by the presence of that body, but to the rude and unskillful methods employed to remove it. A good syringe and warm water is usually all that is required, and is by far the safest method to employ. Rough and careless probing or hooking to get hold of the foreign body often fails to dislodge the object, or pushes it in deeper and injures the delicate parts of the ear. If syringing with warm water fails, efforts at extraction with forceps or other instruments, should be made with great care and only under good illumination with a head mirror. Peas or beans may swell in the ear and are, therefore, hard to extract. In such cases a small quantity of alcohol dropped in on them soon shrinks them, and they can readily be washed out or extracted. Whenever the proper instruments and some means of illumination are not at hand, the foreign body had better be left in the ear until some competent aurist could be consulted.

The patient and his or her friends should be assured that the presence of the foreign body in the ear does less harm than undue efforts to remove it. *Eczema* of the external ear often causes pain and discomfort. Treated by gentle irrigation with warm water, followed by free application of a 5 per cent. ointment of yellow oxide of mercury or a 10 per cent. ointment of ichthyol in vaseline. This troublesome disease can generally be easily handled.

It is often impossible to remove hardened *wax* with the syringe at one sitting. In these cases the patient should be directed to use a solvent solution—sodium bicarbonate, gr. xx to a fluid ounce of water. The ear should be filled with the solution two or three times daily and closed with cotton. In the course of a day or two the wax can readily be washed out with a steady stream of warm water. Insects getting into the ear may cause excruciating pain and great fright. Fill the ear up with oil and smother the insects. If there is no oil at hand, warm water should be used instead. This drowns the insect or drives it out. If the insect is killed and not driven out, it can be syringed out.

Boils in the external canal will produce severe earache. Early incision, followed by syringing the ear with water as hot as can be borne is the best way to handle these. Frequent syringing with hot water gives great relief. When the blood and pus have been washed out, the surface should be dusted with some antiseptic powder or a 10 per cent. ichthyol ointment applied carefully to the surface.

In diffuse inflammation of the external canal "black wash" diluted with equal parts of water, applied often, is of service. For severe pain, apply hot water containing 1 drachm each of tr. belladonna and laudanum to the ounce. The external meatus should be covered with a pad of cotton wet with some solution. The solution should be kept warm and applied as warm as can be borne by the patient.

The most common source of earache is disease of the middle Eustachian tubes for the acute earache of children is nearly always dependent on acute otitis media or Eustachian salpingitis.

Following an ordinary coryza or sore throat, scarlet fever, measles, diphtheria or la grippe. Watch the ears in these affections. It is a danger signal. To neglect these early inflammatory conditions, may produce large number of cases of partial and total deafness of one or both ears. The pain is severe and persistent, and may be followed by disastrous results. A diagnosis can often be made from the history and character of the pain. Upon inspection the drum will be found retracted and congested in the earlier stages, and intensely engorged and bulging later on in the course of the disease.

Early treatment gives the best results in the whole domain of otology as elsewhere and it can be carried out by the general practitioner.

As a rule, suppuration, rupture of the tympanic membrane, and extension of the inflammatory process to the mastoid cells, can usually be prevented by early and proper treatment. When pain in the ear appears during or following an attack of coryza or cold in the head, the nose should be sprayed with a mild antiseptic solution—such as Dobell's solution—followed by inflation of the drum cavity with a Politzer bag. Opening the Eustachian tubes gives immediate relief, but if the nasal congestion is so great as to obstruct the nasal passages, a 4 per cent. solution of cocaine should be applied on a cotton mop, or 5 or 6 drops may be allowed to trickle back over the floor on the affected side. In three or four minutes sufficient contraction ensues for free spraying and cleansing of the nasal passages. This should be repeated three or four times daily, and the inflation once daily until acute symptoms go. Every ear cold should receive attention and proper treatment. Cocaine should not be employed for repeated applications, as the secondary relaxation following its use aggravates the trouble. The solution menthol in fluid albolene or glymol, 4 grs. to the ounce, is excellent to apply with an oil atomizer, after cleansing the nose with the alkaline wash, as a protective, preventing recurrence of the congestion. In very young children plain glymol is preferable. Paracentesis of the drum is not necessary unless suppuration has taken place, and then should only be undertaken by a skillful hand. To syringe the ear with very warm water for three or four minutes at a time gives great comfort. Counter irritation with tr. iodine applied over the mastoid may be employed with benefit. Wet poultices should not be applied over the ear. If suppuration has taken place, free drainage should be established—cleanse the ear with warm water, mopped dry with cotton and dusted with boric acid, but continue the nasal spray and inflation.

Of course, a general tonic treatment is indicated through the course of all these cases.

HOW TO MAKE CONFINEMENT EASY.

BY M. SHELLENBERG, M.D., PHILADELPHIA.

THE medical practitioner should look into the future in treating the girls who are growing up, and correct errors in the method of living, dress, and exercise. He must warn the mother against allowing her daughter to indulge in habits which injure the health, and especially anything likely to cause weakness or disease in the pelvis. The prevention of pelvic congestion by the use of warm undergarments, especially during menstruation, the forbiddance of heavy lifting or long standing, which tend to cause uterine displacements; the avoidance of constipation, a fruitful source of trouble in producing congestion, stagnation, and debilitation in the venous supply of the pelvic organs; prevention of the habitual retention of urine, which weakens the bladder and presses the uterus backwards; avoidance of climbing stairs of high city buildings, both at home and at school; excess of sedentary habits, with lack of good muscular exercise; the use of illy applied or tightly laced dresses, all fall to the doctor's practice. A good, well-fitting, easy corset is far superior to the custom of tying heavy skirts tightly about the waist to drag down the abdomen, displacing all organs beneath it.

The bearing of these points upon future parturition are rarely considered by the woman or her parents, and frequently neglected by the family physician. Diet in pregnancy is important to consider. The prospective mother is now eating for two persons instead of one. The child must be made from the constitutents of the mother's food, and by controlling this we control the condition of the child's body at birth. The head and bones of a child shape themselves to the parturient passage, if they be soft and cartilaginous, while delay and distress to the mother occurs where the bones of the child have become so far ossified as to make them but slightly yielding.

The idea of keeping the fetus small by starving the mother during pregnancy has been tried from time to time, but it must be remembered that the fetus acts as a true parasite and takes good care of itself and its own nutrition without any regard to the results to the mother. It is well known that well-nourished children are frequently born of women suffering from advanced disease and much emaciated. Bedone reports on the differences between the fetal and maternal blood in cases of anemia during pregnancy. He reports nine cases in one of which the red corpuscles in the fetal blood were over 4,000,000 as compared with 928,000 in the maternal blood. In another case there were 5,800,000

in fetal blood as compared with 600,000 in the maternal blood. From this data this authority concludes that extremely anemic women may bear healthy children.

The food eaten by the mother during gestation can be regulated as easily as a person can be fattened or reduced in adispose tissue. Those foods which contain earthy salts in large amounts, such as corn bread, oatmeal, graham bread, beans, and all the cereals containing large quantities of earthy phosphates should not be permitted. The patient should use starchy foods, as white bread, potatoes, with vegetables, and especially fruits. The latter acting in a two-fold manner, the bowels free, causing a solution of the earthy salts of other articles of diet carrying them off by the kidneys. A softer, more cartilaginous condition of the bones of the new born infant will result when the mother eats largely of acid fruits during pregnancy. Prochownik has prepared a diet for women with narrow pelves or with whom dystocia has been due to the size of the fetus. It consists in giving during the last three months of pregnancy, roast and boiled meats without sauces, fresh green vegetables, salads, cheese, butter in small quantity. With the prejudice against water, shared by all Continental writers, he forbids its use, but gives light wine instead. No sugar, but saccharin is given, while potatoes, soups, farinaceous foods and beer are prohibited. A German physician has, according to the *Medical Age*, tried this method during the last two years, and asserts "that the children come into the world small and thin, and depleted of fatty tissue. The passage of the pelvic strait is easily accomplished, always more easily than in ordinary conditions. The method is applicable in three classes of cases: First, in those of narrow pelvis, in which this effect is not inordinately accentuated; if this be so, premature delivery is the only resource. Secondly, in cases in which the dystocia has previously been due to the excessive dimensions of the fetus. Thirdly, in cases of primiparæ of over thirty years of age.

"The regimen is one which it is claimed can be tried without danger to the mother, and the ulterior development of the child goes on normally and without prejudice."

After birth change the diet of the mother to the varieties of food previously prohibited, which will supply bone-making material through her milk to the nursing infant. Pelvic trouble of all kinds must be carefully looked after and corrected, especially inflammatory conditions. Occasionally, pelvic inflammation producing pain upon digital examination will exist for several months during gestation and continuing even after labor is over.

Give local treatment to a pregnant woman, and immense relief follows thereby. These applications may be used from the beginning of pregnancy to the day for parturition without injury if carefully, judiciously administered. The occurrence of varicose things in the lower limbs or vulva is a sign of pressure by the gravid uterus upon the veins of the pelvis, demanding correction.

An antiseptic wool tampon in the vagina, renewed every three to five days, is excellent here, acting as an elastic cushion for the heavy uterus to rest upon, taking the pressure from the veins. The dorsal position is also of assistance to relieve this condition. Baths and vaginal injections at all times are excellent. Occasional vaginal douches, particularly if made antiseptic by some of the weaker germicides, tend to keep the genitals in a healthy state of tonicity and to prevent the entrance of germs.

In the last week of pregnancy, hot hip baths, enemata, vaginal douches, and hot wet cloths, and in the earliest stage of labor, relax the perineal and sphincter muscles, allowing an easy passage of the fetus. Nothing will make flaccid the perineal tissues and relax the sphincters of uterus, anus, and vagina so satisfactorily as heat and moisture. But the water must be hot for use in the hip bath, injection, or by means of saturated cloths to perineum. A temperature of 118° F. must be continued for a long time. In cases of uterine inertia the hot douche stimulates muscular contractions of the uterus as well as to relax the tissues below.

Contractions of the uterus are stimulated by the presence of the examining fingers in the vagina, but as frequent examinations are both dangerous and unpleasant the hand should be placed in position only after a thorough antiseptic cleansing.

The physician should learn the position of the child before labor begins if possible, and if a breech or lateral presentation occur it should be changed to a head presentation. Perform cephalic version, if possible, two weeks before expected labor. It is done by the patient lying on her back with the knees and thighs flexed, while rotary passages are made by the hands of the physician on the abdomen in such a manner as to press the child's head into the pelvis and bring the limbs uppermost. The genu-pectoral position during this maneuver will materially assist in its success.

The clothing of both bed and patient should receive the doctor's attention. It is unnecessary to say they should be clean. Any old cloths, possibly loaded with germs, will not do. Under the bed-sheet should be spread a sheet of rubber or common table oilcloth, to protect the bedding beneath. The patient should wear a warm undervest and clean night dress, neatly and smoothly folded or rolled up almost to the armpits; a roll of cloths or towels placed in the hollow of the back to prevent the clothing working downward, and also to prevent blood or other discharges working upward. Have her put on a clean wrapper, to be taken off after the labor is over. Such preparation will save much discomfort during and after parturition.

Lister was the pioneer in demonstrating the arrest of pus formation building on the work of Pasteur, while Surgery has taught obstetrics the sterilization of instruments as well as the ways of preventing sepsis. No greater advance was ever made than the introduction of asepsis and antiseptics. Applied to obstetric work has proven the physical redemption of thousands of parturient women. Even if the accoucheur has large experience and great skill, and yet does not render himself, the nurse, and his patient aseptic, he fails in the most vulnerable point. The high degree of antisepsis of the surgery of the abdomen should be the type of cleanliness for the obstetrician.

All prolonged or difficult and especially operative labors should be treated with the greatest care, for fresh abrasions and deep lacerations seem to reach septic germs. The hand of the physician and of the nurse should not ever touch the genitalia without having being carefully washed at the moment. The unsterilized hand is unfit for obstetrics.

In Europe there has been recently inaugurated training schools for midwives, but the sacredness and responsibility of obstetric work makes the idea of giving it to midwives most repellant to an American. In these days when such noble and inspiring effort is being made to elevate the standard of qualification in medicine, why should this branch be degraded? This midwife *débris* should be suppressed. Even in such a city as Baltimore,

with more than 600 doctors there are 75 midwives who attend relatively a very large proportion of the labor cases. With the raising of the standard of medical education in this country in the interests of the people why should the poor and ignorant be left to the mercy of the untutored midwives? Especially when now the young doctors, infinitely better qualified are longing for practical opportunities in obstetric work.

If the amniotic fluid be lost before labor begins or should the pains stop after the fluid is discharged, restoration of parturient contractions is in order. Dry births, with their attendant misery and suspense to the mother and danger to the child, might be obviated if the physician be enterprising enough to assist Nature to throw off the child owing to a lack of tonicity in the muscular structures of the mother. This is done by gently kneading the abdomen to incite uterine contractions with one hand, at the same time dilating the os by the fingers of the other hand to secure both contractions and an open passage way for the child.

Nature often produces by reflex action by more or less severe vomiting, having the effect of relaxing the parturient canal and materially assisting in delivery. Janvier suggests that emesis can be induced by having the patient drink large quantities of luke warm water, which is easily thrown off by the stomach producing general muscular relaxation.

Chloroform as a relaxant is used largely abroad, but not so extensively in this country, to secure a partial immunity from the agony of uterine contractions. In small doses it has seldom proved harmful; given with a free hand it causes a lessening or even a cessation of pains and thus prolongs the labor beyond a normal duration. Given in short inhalations at the time of severest pains, it is one of the most valuable agents we have in securing easy parturition, and will not tend to produce post-partum hemorrhage unless used after the uterus is emptied of the greater part of its contents.

Occasionally, in prolonged labor, where the strength of the patient has given out and the pains have ceased altogether, a large hypodermic injection of morphine temporarily checks the labor and gives the patient rest and sleep, lasting from one to several hours. On awakening the pains start with renewed vigor and the patient is in a much better condition.

Cocaine has been recommended for lessening the pain from the intense pressure and stretching exerted upon the vagina, vulva, and perineum. Introduced in cocoa-butter suppositories, or wrapped in a small pledget of cotton, about the time the head impinges upon the perineal tissues it has received favorable reports slowly dissolving it spreads itself over the mucous membrane of the pelvic outlet, producing an anesthetic effect which lasts about an hour. If there be a lack of the natural lubricating discharges, the cocoa-butter suppositories are best, otherwise the cocaine applied on cotton, or even on the ends of the fingers, answers every purpose and is more convenient. I have been told many times that the patient dreaded most the last, severe, expulsive pains, and the immunity from suffering offered by this simple procedure, has been very gratifying, to both patient and physician. The danger of absorption has not been reported.

The umbilical cord should not be cut at once, for after expulsion of the child more blood is pumped into the babe than returns to the mother. Wait until pulsation has nearly or entirely ceased. This secures a greater supply of blood for the child and reduces the size of the placenta.

Squeezing of the uterus, as though it were an orange, through the abdominal walls is excellent to stimulate contraction so that the secundines can be expressed entire, without any traction upon the cord. Traction delays delivery by pulling the flat surface of the placenta to the mouth of the womb instead of the edge of the rolled up placenta. This procedure of expression empties the uterus of all the clots and *débris*, and leaves it in a condition for the continuance of gentle tonic contraction, less exposed to spasmodic after contractions.

This tonic contraction of the uterus after labor only rids many after pains, but frees the organ from clots and danger of sepsis is obviated, and the uterus is in a better condition for involution. For a large and flabby uterus give small doses or ergot or viburnum four or five times daily for several days or even weeks.

Ergot in labor has become much restricted in late years. It often does as much harm as good, and produces much suffering by its cramping, spasmodic contractions. It often tends to contract only the middle or lower portion of the uterus, hindering expulsion. Far better in the majority of cases is friction or massage of the abdomen above the uterus. Future experiences will probably demonstrate that it is superfluous and oftimes dangerous in securing easy parturition. Quinine is a better oxytocic, producing a more natural, intermittent contraction than ergot. But remember Nature intended parturition to be a physiological process, hence, interfere as little as the case permits.

A STUDY OF SOME INTERESTING PULMONARY CONDITIONS.

BY G. R. REED, M.D., PHILADELPHIA.

THE first case is that of an Italian and not well acquainted with the English language. We have, consequently, been able to obtain but a very inadequate history. So far as we have been able to ascertain he has had a headache and some cough. There have been no abdominal pains. I have been able to learn only these symptoms, and am thrown, therefore, in great part upon the objective symptoms manifested. An examination of the urine showed a specific gravity of 1032 with the absence of either sugar or albumen, and the occurrence of a large number of uric acid crystals. There were no casts. Expectoration was rather copious. The examination of the sputum discovered no tubercle bacilli. On admission the temperature was below normal, but it has gradually risen until now, when it is 100.8°.

This inadequate history and the present conditions are the only feature, besides the physical examination, upon which I was compelled to base my diagnosis. The sputum, which was thick and plentiful, of a rather tenacious character, gave me at once a clue as to some pulmonary disorder. I forthwith proceeded to examine the lungs. There is probably no serious condition other than these symptoms indicate, for the man is young, rather well nourished, and does not seem subject to any chronic disease. In making examinations in acute cases we are much more likely to find the seat of the disease at the back, preferably at the base of the lungs. I generally begin my examination at this point to arrive as soon as possible at the seat of the trouble. Upon auscultating on the left side below the angle of the scapula I can hear a number of distinct mucous râles. Examination of the left side shows also some râles, but not so distinct or so numerous as on the right side. Percussion shows an impairment of resonance on the left side, a fuller and better sound is heard on the right

side. The rest of the lung shows no changes which are of any significance as to diagnosis. The important diagnostic signs are therefore as follows: the decided impairment of the percussion resonance, approaching almost to dullness, on the left side; the feeble sounds which are elicited by the patient's respiration; the decided diminution of both vocal fremitus and local resonance. Besides these signs, I note the absence of bronchial breathing.

This is an atypical case, a departure from the straight line of the text-books, yet it is one which is very common. If any inflammation of the lung is pneumonia, then this man has pneumonia, for there is a very evident inflammation of the bases of the lungs, more marked on the left than on the right side. The presence of the crackling râles readily exclude a diagnosis of pleurisy with effusion. The case is what is known literally as pneumonia, but of a very mild grade. This man has a cold which has affected his left lung more than his right. It is a form of cold which is very common in this climate. This being then the case in total I think myself called upon to prescribe only a very simple remedy. I ordered carbonate of ammonia to be given every three hours.

The differential diagnosis between pneumonia and pleurisy with effusion is generally not very difficult. Pneumonia presents over the affected area a dullness on percussion, large and small crepitant râles, a decided bronchial breathing in typical cases, and an increase both of vocal fremitus and vocal resonance. In cases of pleurisy with effusion dullness is usually found upon percussion. There are no râles; there may be a slight bronchial breathing, and there is a diminished vocal fremitus and vocal resonance. I do not doubt that in this case there is a serous liquid filling up partially the air vesicles, but this effusion is not so great as to give us total percussion dullness. This man will probably be well within a day or two.

The next case is that of a young colored lad sixteen years of age, who was admitted to the hospital on the second of December. He gives a history of pneumonia two years ago, from which he made a good recovery. Since then, up to the present attack, he has been in fairly good health. His present illness dates from one week back. At that time he was affected with a headache and sore throat. His bowels were constipated, but there were no abdominal pains. Examination of the urine showed the presence of a small amount of albumen and the absence of sugar. There were a few blood cells whose significance I am as yet unaware of. No catheter has been used. The temperature on admission was 100°. It has since then gradually risen until yesterday, when the highest point, 102⅗°, was reached.

I made my diagnosis by an examination of the throat. I noticed the tonsils to be enlarged and covered with white specks. This gave me at once the key to the situation. There had been a follicular tonsillitis. I carefully examined the lungs, but found no signs which would lead me to suspect the presence of any lung trouble. I noticed a dry, white powdery appearance on the internal surface of his nostrils, the evidences of coryza. We have, therefore, a case of what is so commonly called grippe. This began seven days ago and since then the attack has become so markedly diminished that now probably we are treating only the late stage of the trouble. I ordered gr. 5 potassium chlorate and ℥v tincture of ferric chloride to be administered every three hours. I think that this patient will rapidly get well.

Our next case is that of quite a different kind of person. The first two cases were young persons suffering from acute infections. This man is older and is subject to a chronic disorder. He is sixty-two years of age, an Irishman by birth. We admitted him on the second of December. His family history is as follows: His father suffers from dropsy, while his mother is well, at the age of ninety-five years. His brothers and sisters have died in various accidental ways. The whole family history is such as would throw no bearing on his own trouble. He has seven children. Some time ago he was a miner for fifteen years. He gave up this occupation and became a laborer in Baldwin's locomotive works, where he has since been working for fourteen years. For the last two or three months he has not been feeling well. He has had coughs off and on during this time. There are no signs of alcoholic excess and he gives no history of alcoholism. He complains of a smothering feeling in the chest. We have examined his feet, they are not edematous. The expectoration is copious. He stopped work two days ago. On admission he had an almost normal temperature (98⅘°). Subsequently it rose to 99⅘°, but has since fallen to subnormal. This is probably due to his general condition of lowered vitality as you look at his chest you notice that it is rather rounded, the antero posterior diameter being greater than is normal. Auscultation discloses very weak respiration sounds and whistling râles upon expiration. These indications which I have observed previous to this time, pointed to a diagnosis of asthma. In accordance with this diagnosis I ordered gr. $^1/_{60}$ morphine, and gr. $^1/_{120}$ sulphate of atropine to be given night and day. Later I discovered a bronchitis, for which I gave gr. 2½ carbonate of ammonia every three hours. The bronchitis was not very severe, and a close examination does not give any signs of pneumonia. All the indications have thus far confirmed my first diagnosis. There is without doubt a certain degree of emphysema. It was from the shape of the chest and the feeling of suffocation that he complained of, that I arrived at the key of the situation. As I examine him now I find whistling râles both on inspiration and expiration. These whistling râles are peculiarly characteristic of asthma. The age of this patient renders his trouble a permanent disability.

The next case is that of a man forty-nine years old, a carpenter by trade. He was admitted to the hospital on the thirtieth of November. The history seems to have no bearing on the present condition. He has been to Africa, where he had an attack of jaundice, which confined him to a hospital for nine weeks. During this time he had diarrhœa wtih bloody stools (due probably to some form of dysentery). His liver was enlarged, and he had pain in the abdomen. He has been in Philadelphia for fourteen years. About five days ago he complained of a tired feeling, and of a sensation in the chest, which felt as though he had a lump there. At this time on account of the onset of severe symptoms he was compelled to stop work. He was seized with severe abdominal pains, which were decidedly more marked on the left than on the right side. Accompanying these pains was a severe headache. Attacks of nausea and vomiting developed and he was, on the whole, in much general distress. When he was admitted his temperature commenced going up, but soon afterward it sank and has since been going steadily downward. The highest point reached was 102⅗°. Palpation could elicit no satisfactory results, because of the hardness of the abdomen, caused by the contraction of its muscles. His face, upon admission, was markedly different

from what you now see it. There were in the complexion and features, the unmistakable signs that indicate the chronic drunkard. Because of the abstinence which his confinement has necessitated and because of the sound rest, his expression has undergone such a change that you could not, at the present time, even suspect him of drunkenness. The abdominal pains were the symptoms which had interested us at first, since it might have been one of the numerous inflammatory conditions of the abdominal contents which might have required surgical intervention. After my examination, however, I diagnosed simply a cramp due to alcoholic excess, and not in any way an operative condition. Subsequent developments have borne me out in my diagnosis. To alleviate his condition I prescribed liquor ammonia acetatis, one-half ounce to be given every three hours. This, I think, is a very useful drug for the treatment of chronic alcoholics. Had the pains been very severe I would have probably given opium. From the location of the pain, which was at times occasionally over the bile duct, inflammation of that structure might have been suspected, but developments have not confirmed any such suspicion.

The next case which I bring to your attention is that of a rather old person, who was an inmate of this hospital before this time. He was dismissed from our care on the twelfth of November, but was compelled to return on the fifth of the present month. He has the usual asthmatic chest, caused by the increased amount of air in the lungs, and the total inability to expel it. The respirations are greatly diminished in frequency, and their rhythm greatly disturbed, the inspirations being shorter than normal, and of a gasping character, and the expiration, which follows immediately, being much prolonged Palpation in this case, as in all other cases of asthma, is negative in its results. I get a hyperresonant note by percussion. On auscultation I find the inspiration to be short and feeble. The expiration, on the other hand, is much prolonged, and accompanied by a hissing or wheezing sound, which is audible at some distance. I notice also a great variety of râles, large, small, and intermediate. These are more marked on expirations than on inspirations. The heart sound can be heard only with great difficulty on account of the noisy respiration. The pulse is rather rapid and feeble. The treatment at the time of admission consisted of the injection hyperdermatically of one-sixth grain morphia and one hundredth of a grain atropine sulphate. We gave as a cardiac stimulant five minims of the nitrite of amyl. His bowels being somewhat sluggish, calomel was given in small doses every hour and enemata were used with some efficiency. By this treatment it did not take long for the majority of the reflex symptoms to disappear. When I last examined him, yesterday, I found him decidedly improved. He was resting easy, and was rather comfortable. There was, however, still a marked dyspnea. I prescribed at this time tr. digitalis ℥iii., and strychnia sulphate gr. $^1/_{20}$ to be given four times a day. At night, when the asthmatic attacks are most common and severe, I directed that he should be given chlorotone. This has been given since every three hours.

Examination of his urine showed that it contained no sugar or albumen. It was of a light amber color, of a specific gravity of 1014 (rather unusual in these cases), and contained epithelial cells and quantities of the amorphous urates. There was a flocculent sediment upon standing. The temperature during the attacks is, as usual, subnormal.

The case is a rather unusual one, presenting several interesting features. He has been under my care frequently and his asthma is of a remarkably persistent type. The attack is evidently, not one of cardiac or of renal asthma. The former is apt to occur in lesions of the heart, followed by its degeneration. Such asthmatic attacks come on usually in the morning, and are apt to be accompanied at intervals by angina pectoris. The renal form of asthma is a marked, rather constant, and often early symptom of uremia. These attacks come on generally at night. A slight dyspnea may be contant in cases of chronic uremia. On the other hand there may be alternating violent paroxysmal attacks. In these cases the asthma is due probably to the effect of the toxins circulating in the blood, upon the respiratory centers, or to the cardiac lesions, which may be brought about by the same cause. This case, however, shows none of these indications, all the prominent signs and symptoms pointing to a diagnosis of bronchial asthma. The specific gravity of the urine may be accounted for by the polyuria. There is a total absence of albumen and of all the other conditions which are common in the urine of renal asthma. In this case as in many other cases of asthma the urine, in the period leading up to the attack, is of an unusual light color. It is very irritating to the neck of the bladder and causes great discomfort to the patient to discharge the hot, scalding urine in small amounts at frequent intervals. As the asthmatic attack comes on there is a copious discharge of the urine, this being the polyuria which we note in this case. The characteristics are, as you may perceive, very much like those which we see in hysteria, and many observers have for this reason asserted that asthma is probably merely a symptom and not a disease. The case we have here is one of bronchial asthma, and is probably a primary neurosis.

As regards the heart, I have found a soft systolic murmur, most distinct above the apex. There are all the signs of mitral insufficiency and a low degree of cardiac dilatation. There is an enlargement of the arteries and decided signs of sclerotic changes in these vessels. Not only are they hard, but they are without any doubt atheromatous. As we ran our fingers up and down the radial artery, there is the same sensation as if we were feeling the wampum or band of beads of the Indian. There is a certain amount of senile dilation of the heart, and for this reason the aortic element of the second sound is not markedly accentuated.

The patient has improved greatly since his admission. The asthmatic attacks have greatly abated and he has been able to rest much more easily than is his wont. There are still some sonorous and some mucous râles. We will keep this patient in the hospital for a few days more. If the asthma recurs we will take advantage of it as an opportunity to study the effects of chlorotone.

The second case was admitted to the hospital on the twenty-fifth of November, that being the sixth day of the disease. On admission his temperature was 102°. This rose rapidly to 103°, but in three days it fell by rapid lysis to 97°, and, with the exception of one brief period, has ranged below the normal, between 96.4° and 98.2°. Last night the temperature was 96.4°. The patient is F. A., forty-three years old, a laborer, single. Since he speaks no English we have been able to get no history. He is not well nourished. On admission his face was flushed, and his breathing rapid and harsh. It had a loud bronchial character. (These respiratory symptoms are not present in all cases, yet they are very frequent.) His lips were dry, there were no herpes, but a dark erythemato-papular eruption covered the inner side of

both arms, the lateral and posterior aspects of the thorax, and extended down over the thighs. This was of a purpuric character. It has now entirely passed away. This lesion is interesting, particularly so at the present time, when we might suspect the initial rash of smallpox. The tongue is coated. Anteriorly both lungs are resonant. Posteriorly we find resonance only in the left lung. Over the dull area of the right lung there is harsh tubular breathing, and an increase of both vocal fremitus and whispering fremitus. There is, however, an absence of râles. The area of cardiac dullness is normal, and the sounds are heard most distinctly at the base. The urine contained a small amount of albumen, and a small number of casts. It had a specific gravity of 1024. There is no sugar present.

Examination of blood showed a leucocytosis, the leucocytes numbering 13,450. The treatment has been dry cupping over the dull area, Dover's powders, five grains every three hours, ammonium carbonate gr. v., strychnine gr. $_1/_{40}$, increased to $^1/_{30}$, three times a day. For several days the patient has had a weak respiration, the tongue remained coated in spots. On the right side, the harsh breathing and dullness still continues. At the base of the left lung, posteriorly some bronchial breathing is apparent. The temperature on the twenty-ninth of last month became normal and has fallen since to subnormal. At the present time we are giving him strychnine and compound tincture of cinchona. The sputum had at first the characteristic rusty appearance. It has, however, cleared, and is now normal except for its slightly viscid nature. A certain amount of the cough still persists. The tongue has entirely cleared off.

The diagnosis was croupous pneumonia, defervescence occurring on the twenty-ninth of November. The case has made thus far a rather good convalescence, but the dullness which still remains over the affected area may indicate some rather serious conditions. We should be on the guard against a pre-existing tuberculosis. Besides the persistent dullness there is still a bronchitis and cough. Four principle conditions should be considered in a case of this kind. First in order would be a simple persistence of the exudate which is undergoing resolution very slowly. Such a condition would give us no anxiety whatever, although its exact termination might not be known. The second condition open to suspicion is an exaggeration of the first, what is known as delayed resolution. In such a condition the consolidation may persist for several weeks and the person not appear to be doing well. Usually defervescence by crisis has taken place long before the physical signs indicate the beginning of resolution. The third condition which might be considered is broncho-pneumonia. In such case resolution is much less rapid than in the croupous form of pneumonia, because in the former condition the tissue itself is infiltrated, while in the latter, the exudate is contained within the vesicles. Tubercular infection is the fourth possibility. This should be carefully investigated by a consideration of the history, by the loss of weight if there be any, and by the degree of temperature, there being usually a slight fever in tuberculosis. Before we can determine between any one of these four conditions we must find out in the first place whether or not there is any pleural effusion. We have found that there is an impaired resonance over the affected area. This is an argument against the presence of an effusion. Furthermore, we find that there is marked vocal fremitus here, a condition which would not be present in pleuritic effusion.

Observing the secondary signs which we would find were this condition present, we find that the apex is in the normal position, and that the liver, although slightly depressed, is not sufficiently so to justify such a diagnosis. We may, therefore, dismiss the suspicion of pleuritic effusion. If upon further examination we cannot find the tubercle bacillus I would say that we had probably in this case a condition of delayed resolution. In treating this patient tinctures should be used in preference to any other preparations of drugs because of their large percentage of alcohol, furnishing a stimulant of which this person is in much need, since as you may readily see he is in a condition of marked depression. Besides strychnine and tincture of cinchona, I will prescribe potassium iodide, beginning with small doses and increasing gradually up to ten grains three times daily. Summing up, therefore, I may say that as a provisional diagnosis all indications point simply to delayed resolution in a case of croupous pneumonia. There is, however, still a possibility that there is in the right lung a local area of broncho-pneumonia, resulting from a tubercular infection. Until we make a thorough examination for the tubercle bacillus, we must consider this possibility.

The next case is one of gonorrheal arthritis. This patient is twenty-eight years old. Four years ago he had an attack of gonorrhea. During the course of the disease his right foot became swollen and painful. He became well, however, and had no more trouble until six weeks ago, when he received an injury to his foot. This was followed by a swelling and pain similar to what he had before experienced. Soon after the inflammation traveled up to his right hip and that joint also became enlarged and painful. He was admitted to the hospital on the twenty-third of October. At that time both feet were red and swollen, but all the signs in the hip, of which he had spoken, had disappeared. There was practically no fever. The salient features of the history are then, the occurrence of gonorrheal arthritis four years ago, and a similar arthritis six years ago. The urethral infection, I was given to understand, was not very severe, the discharge disappearing in a few days.

I bring the case before you to impress upon you the difference between this condition and articular rheumatism. The symptoms of gonorrheal arthritis, both local and general, are entirely distinct from what we know as rheumatism. It is a misnomer to call the condition gonorrheal rheumatism, because it is in reality not a rheumatism. Its differentiation is, of course, at times very difficult, and cannot be made without the history of a urethral infection, or the determination of the gonococcus in the blood or joint effusion. We may, however, always suspect it in a young adult where the painful and swollen condition of the joints and the inflammatory condition in one or more joints persists for several weeks. Such persistence dismisses the idea of ordinary rheumatism, and we should then make very minute inquiries as to the history.

In these cases the salicylates are practically useless, bringing no other results than discomfort from the tinnitus aurium, the headache, and other physiological manifestations of the drug. In fact, I have seldom seen internal medication of any kind to be of any material benefit, with the exception, possibly of mercury. Local measures are of great importance.

—It is said of Jonathan Hutchinson that he is perhaps the best all-around physician and surgeon in the world; that he does everything and anything with a thoroughness and skill that would do credit to the most dexterous specialist.

THE SYSTEMATIC STUDY OF OBSCURE NERVOUS CASES.

BY WM. WORMLEY, M.D., PHILADELPHIA.

THE following case is of considerable interest from the standpoint of the diagnosis. The patient is a man aged 49 years; his previous history is practically negative; the only disease he has had is typhoid fever, when a boy, and that cannot be of any importance in the present trouble. There is no history of tubercular or malignant disease or of alcohol. He tells us he was perfectly well until some six or seven years ago, when, while at work, he fell from a distance of some eight feet, striking upon his neck and back of his shoulders. He became unconscious, and when consciousness was restored, it was found that he had paralysis of both arms and both legs; the paralysis was absolute on the right side. He did have some power of moving the left leg and left arm, and the power rapidly improved upon the left side. There is no very marked loss of sensation; nor are we sure of the character of the pain. There seems to be pain at the back of the neck and shoulders, which could be attributed to the marked violence upon the tissues of the back and neck; he also had some difficulty in voiding the urine, which persisted for a few days. He was very hard of hearing for many years, which was due to some ear trouble, and which had nothing to do with the present affection. There is paralysis of all his extremities; but it is incomplete on the left side. Sensory loss is not profound. For a few days only he had a little difficulty in emptying his bladder, and that difficulty subsequently disappeared. Two days after his fall he began to have some improvement in his left side; and three weeks after he began to move his right side a little, and since then has had more or less marked progress toward recovery of motion.

When he first appeared in the wards of the hospital, his case was carefully studied, and it was found that his reflexes were plus in both arms and legs. On testing the reaction in the right legs it was found there was no response; also when he was tested upon the right side with his finger or a wad of cotton. There was no sensation upon the right side whatever; but when touched on the left side there was response, but not normal. This part was slightly benumbed, hyperesthetic, and on the left side it was found that this hyperesthesia was more marked, responding to temperature; he frequently made mistakes, sometimes calling a test-tube that was cold, hot, and when hot, cold; there was diminution especially on the point of temperature. There is some affection of the pupils, which was a little more marked in the beginning than at present, both pupils, however, react to light, and there is some accommodation. The slight inequality of the pupils may be physiological. It was a little more marked at first, which possibly was due to physiological reaction.

Now, let us classify this case. We will study first the surface structures, naturally or in case of injury, whether of the skull, back or neck, or anywhere. We find no tear of the muscles, no serious strain of muscles, no muscular spasm, nor did we find present any rigidity of the neck. He can turn his head from side to side; also can throw his chin down upon his breast. Rigidity may be caused by a serious spinous strain. When there is acute pain there may be a tear of the muscular insertions; a twist of the muscles. Sometimes the bones are dislocated; then not only is there a deformity, which can be recognized by examining the spinal column by the fingers. Exploring of the spinal column may also be made through the pharynx, and when this method fails we resort to the X-ray. The fact that this man has no rigidity, proves to me that there is no serious involvement of the tissues surrounding the spinal column or in the column itself.

If the injury is not in the tissues covering the spinal column, it must be within the column; it may be both to the muscles and the cord, or both to the cord and the membranes; or it may be that some of the veins have been ruptured by the fall, and the blood may be poured out between the dura. If so, he would probably have deep-seated pain; he would have rigidity of the muscles and pain. If the injury is in the spinal canal, he would have numbness of the feet; if the columns fill up with blood pouring out at the posterior roots, he would have marked anesthesia. Hence we have signs of trouble within the membranes. Are such symptoms present in this case? He has had no marked pain. If any of the membranes were injured we would refer naturally to the injury of the cord. Has he had concussion of the cord? Has he had a little hemorrhage of the cord? Before we start looking into the lesion of the cord, let us see further. We will examine the reflexes. The knee-jerk is quite marked; there is slowly disappearing ankle clonus on the right side, the left is also quite plus; patella clonus is not decidedly present in this case; on the test of pressing it does not respond. The toes go up very promptly. Now, these symptoms are all plus muscle jerks. On examining the arm, we find there is some increase of biceps jerks; on striking the tendons, there is a slight reaction with the hammer; we have a plus tendon jerk. We have reactions in the arms similar to those of the legs, biceps reflex, also reaction is obtained by striking the triceps. All these reactions are plus.

We are able to get some reactions in the wrist; but they are subsiding more or less. These symptoms, all plus reactions, of the arms and of the legs, together point to a lesion of the lateral columns. This man has always been temperate in his habits. He has not been sufficiently long under observation to note whether there is wasting taking place. The condition of his hands is suspicious; there is distinct flattening of the thumb; also of the interosseous muscles. They seem to be smaller; he has not been under observation long enough to tell whether these are peculiarities, or whether atrophy has taken place. We have, then, plus reactions and symptoms that refer us to some lesion within the cord. This man had an hyperesthesia of the left side of the body, which is more marked by temperature and pain than merely tactual. A few weeks ago I had a case of painful muscles of the feet. The fibres of the feet conveyed a painful sensation from the cord. The pain was great; it was acute. They refer us to the grey matter just as imperatively as extensive atrophy of the muscles. Fibres which convey sensation, fibres which enter the posterior cornu, pass through the grey matter and stretch across to the other side of the cord, the pain especially passing up along the lateral aspect of the cord. These fibres cross through the grey matter. I will use this case to illustrate, that the impairment of the temperature sense and impairment of pain sense when they exist together with tactual sense, refers to the grey matter. This man has had lesion of the cord, probably due to lesion of the cord due to the concussion, in the lateral tracts and through the gray matter. I do not believe that they are large hemorrhages, because there are no wastings.

From his having been examined electrically, we found that he responds well to the Faradic current. The case is probably one of minute topical hemorrhages. They are being reabsorbed, and it remains for the future to see whether he is going to make an entire recovery. Not infrequently a lesion of the cord such as this man

has, is what is called a concussion myelitis, and the fact that this man is getting better, is improving, would make us fear that the diagnosis is incorrect; but we can only tell by watching the extent of his improvement. I had a case before in which the man made an almost complete recovery; he recovered the movement of all of his limbs excepting the upper arms, the deltoid had some weakness, also the triceps and the biceps. This man is able to put his arms up over his head, which shows that he is recovering. The wrist drop in these cases is not like that of multiple neuritis or in palsy. He has some power to extend his arms. This case is an important one and an interesting one from the point of physiology. The lesion must have occurred in the cervical portion of the cord.

In taking up the treatment of this case, the old idea of concussion was that the patient had a temporary or partial loss of power only. But now it is known that when you have a severe blow upon the back, not only molecular disturbances follow, but you will have capillary disturbances as well. The treatment is inward; limited, or possibly somewhat limited. This man rests absolutely, but on finding that he is getting better, his desire will be to walk; but he should be restrained; he should be kept in bed for a long period; prolonged rest for that spinal cord; kept lying, use friction on the muscles, by rubbing, massage, electricity, regulate the functions, feed him fairly well; even liberally. As regards drugs, they do not promise much. We have placed this patient upon the iodides, as they do some good, exciting and stimulating absorption.

We find in the next case, that of a boy, one of an entirely different character. This boy is 13 years of age; his family history and the personal history, up to the beginnning of the present trouble, is negative; four sisters and two brothers are all said to be in good health; family history as far as we can get it is negative. He had measles as a child. He was brought first to the Genito-Urinary Dispensary, and the statement made there was that five years ago, the patient was troubled by frequent micturition. This symptom lasted about one year, and was not accompanied by pain or any other distressing symptom. One year ago, frequent urination again made its appearance, and this was accompanied by a sensation which was one of pain or of distressing symptoms which are referred to the lower portion of the abdomen and to the groin and to the pubic region. He was obliged to urinate according to his own statement, every two or three minutes during the day; urinated very frequently; at night was obliged to leave his bed, however, only on two or three occasions.

No symptoms are referable to the bladder, nor to the kidney. Pain and sensations of distressing character may accompany stones in the kidneys as well as stones in the bladder; but this boy had no pain referable to the head of the penis, which is often present when there is stone in the kidney; there is no retraction of the testicle, nothing that would suggest surgical difficulty. The specific gravity of the urine is 1020; acid; and only normally so; urea and the urates were normally present. Physical examination directing to the bladder or the kidneys was negative. It was also negative to a large degree when the examination was made of the general physical make-up of the boy. That there are no signs of any organic nervous disease; he walked all right; no signs referable to lesion of the cord, no iliac pains which we have with myelitis, no history of gradually growing weakness of the legs, the absence of all physical signs, pointing to any other organic involvement of the spinal cord. This would make us think of the spinal functional disturbances. You are first to exclude all local disease in the organs to which the symptoms will refer; eliminate disease of the urethra; foreign body or inflammation in the kidney; stone or disease of the kidneys; also disease of the spinal cord accompanied by frequent micturition. These are not common. There is a tendency to leakage; patient knows that if he does not empty his bladder soon he will wet his clothes. The belt-like pains of myelitis were absent; spastic paralysis, and the other symptoms of myelitis were not present; negative as regards the spinal cord. We are next forced to consider some functional trouble. Now the number of functional disease, general neuroses, which are liable to show these signs, are not large; they suggest hysteria, chorea, neurasthenia. Now in children who are neuropathic (neurophobia), there is some manifestation of hypochondriasis. This boy did not give symptoms of neurasthenia. What expression did I use giving symptoms of neurasthenia? What did we term the whole group of symptoms? Nervous exhaustion.

In neurasthenia we have neuroses, all of which are esthenic in character, indicating nervous fatigue. This boy presented no such symptoms; nor could I find that this boy was specially hypochondriacal. I then made a careful study of this case. In the middle ages hysteria was not at all understood. Hysteria may manifest itself in various ways. Hysteria is really a very common affection. Sometimes you will see a hysterical tic, or what is frequently a hysterical spasm. Departures from the normal are motor, and sensorial symptoms, and symptoms also referable to the viscera; also some mental symptoms. Motor symptoms occur, and I will mention a few of them. A girl has palsy of the arm, or palsy of one-half of the body or of both legs, or spasm of the arm or legs, which is drawn or turned in, some attitude adopted. No such symptoms were present in this boy's case. When we study it for sensory symptoms, we find them present, more marked on one side as compared with the other; there is not an absolute loss, but merely a partial loss of sensation; again in hyperesthesia; not so frequently met with as in complete loss. He feels the touch behind on the right side more distinctly than on the left. As a rule, this loss involves also the face, so that the child feels less readily upon the left than upon the right side. The retina of the eye upon the right side in which the hyperesthesia exists, is not the same.

When the retina loses the sense of light in hysteria there is a contraction of the visual field; the numbness of vision is limited to rather a small cone; will not see as far in one eye as with the other. These symptoms shift so in hysteria; they are so often so evanescent that the examination made to-day differs radically from the examination made a few days ago. In some cases they last for a period. This boy has complete anesthesia of the fauces; that, together with the hyperesthesia, still persists. These are two quite characteristic markings of hysteria, a loss or impairment of sensation of the one half of the body; also this marked impairment of the sensation in the fauces. The sensory disturbances of hysteria may manifest themselves in other ways, which involves the arms and hands, stocking from wrist to elbow may be affected; and then it is called segmentary anesthesia. This points to hysteria undoubtedly. This irritable bladder is hysterical in nature.

Now this boy has not an elongated prepuce; he has not been circumcised. If this condition persists, this boy should be observed with regard to masturbation, to see if that habit is practiced or not; should be kept in bed. We know that in hysteria we have, as a rule, a patient who is not well nourished. Feed in hysteria just as you would in neurasthenia. Milk, massage; constantly

encourage to make an effort to retain the urine; should be told repeatedly that he can retain the urine; should be warned not to retain for a longer period than proper. Bladder disturbances are sometimes not only indicative of disturbance of the urethra, but of the pelvic viscera. They are sometimes symptomatic of seat worms. All sorts of diseases of the organs should be investigated.

TALLQVIST'S HEMOGLOBINOMETER.

This instrument consists of a neatly bound book, to fit the coat pocket. Within, the book reminds one of the "Great Achievements of ——— Party," prepared by its political opponent, for its pages are entirely blank. The leaves are perforated stubs of fine filter paper. At the back is a sheet giving the appearances of blood of each 10 per cent. strength of hemoglobin, 100 per cent., as in all such scales, representing blood of full normal hemoglobin content, namely 13.5 per cent. The filter paper is saturated with blood, blotted and viewed immediately by direct daylight and compared with the scale. The filter paper distributes and, so to speak, dilutes the blood, just as would happen if it were diluted with a colorless liquid. We are not prepared to vouch for the accuracy of this method as compared with other tests, but it is stated that it is fully as accurate as other colorimetric methods—a modest claim—and it is certainly possible for one with normal vision to match tints within an error of 10 per cent. It is really a criterion of accuracy that the specimen often resembles equally two successive reproductions in the table, indicating that the blood has an intermediate hemoglobin percentage. We have found it convenient to paste in a fly leaf, so as to keep a record of examinations. Tests by artificial light are not reliable nor those made after the blood has changed color by standing, nor those made before the instantaneous glossy surface has disappeared. This instrument, by its cheapness and convenience and rapidity of manipulation, seems destined to supplant all previous colorimetric hemoglobinometers.

HEMOGLOBIN ESTIMATIONS IN GENERAL.

With the exception of an occasional careful chemic analysis of blood, as a basis for clinical work, the considerable bulk of literature on the general subject of iron in the blood, including diagnosis and therapeutics, has grown up on a trellis of examinations which are primarily nothing but an ocular judgment of the richness of the blood in coloring matter. In judging of the relative redness of the blood, there may be a difference between two observers of equal experience while the individual error or, rather, inability to distinguish an exact tint, amounts to at least 10 per cent. Two or three competent investigators with the older water diluting instruments, may often vary as much as 20 per cent. Moreover, the theoretic 100 per cent. is rarely met with, even in persons in health and showing a normal number of red cells. This reminds us of an overconscientious faculty who, realizing that all things human are imperfect, based all of its markings of pupils on a standard of a possible 90.

So long as we bear in mind that clinical estimations of hemoglobin are colorimetric and only approximate, they are of considerable value, though with the early instruments, scarcely worth the time and trouble to the ordinary practitioner who could much better guess at hemoglobin from cellular richness and staining.

But we must take with a liberal discount all quantitative statements as to color index, etc., based on colorimetry. The attempt to classify anemias into simple, pernicious and chlorotic, according as the color index was 1, greater than 1 or less than 1, unity being the normal ratio between cells and hemoglobin, or into two classes, according as this ratio is exceeded or diminished, rests on a simple division. One of the factors of the division, the proportion of red cells, is easily and quite accurately determined, but the proportionate amount of hemglobin is, as we have seen, seldom up to the theoretic normal in practically normal individuals, and it is liable to a very considerable error, so that the quotient or color index is similarly liable to error. Now, it is beyond question that a typic pernicious anemia, with a considerable number of megalocytes, has a characteristic color index greater than unity, that is, that the average cell contains more hemoglobin than in health. It is also indisputable that the opposite condition exists in typic chlorosis. Some authors do not recognize or, at least, omit from such a classification, cases of impoverished blood in which the cells and hemoglobin fall *pari passu*. Yet it is obvious that all three conditions must exist, or if not, that the explanation probably has some deep import. On the other hand it is very doubtful if all cases of anemia can be divided into color-index groups which correspond in every instance to the clinical divisions of anemia.

The matter of color index may prove to be extremely valuable as a criterion or it may not. At present, we cannot consider as significant a change in color index which is not of sufficient degree to remain after a possible correction of hemoglobin, allowing for the widest variation in reading. Such a correction as this, say 10 per cent. either way from the observed reading, would, in many instances, change the classification of an anemia.

A. L. Benedict has suggested that, in all cases in which the determination of hemoglobin is of considerable diagnostic or prognostic importance, the ordinary clinical methods which deal with a drop or two of blood, should be set aside, and about 10 cubic centimeters should be drawn by a breast pump, adding enough magnesium sulphate or other salt in definite amount, to prevent coagulation. The specimen is then turned over to a chemist for accurate weighing of the total and determination of its iron after incineration. From the proportion of iron, that of hemoglobin may be obtained by multiplication or the estimation may be stated in terms of iron.

—From the *Gazette Médicale de Paris* for August 3d we learn that the Superior Council of the Paris School of Fine Arts has had under consideration the question of employing the academic loin covering (*caleçon*) for models posing in the presence of the women pupils who are now admitted to the school. The representative of these ladies has solved the difficulty by a letter addressed in their name to the Superior Council, in which she says: "We demand to be treated like the women students of medicine. Do they put drawers on their subjects in the schools? We study what they do, but from another point of view. That is all." This argument has prevailed, as indeed it ought to, and the Superior Council has proscribed the *caleçon*.

—On May 24, Mary Maddox, a negress, of Opelika, Ala., gave birth to a well-developed male child, with four legs. One pair of legs are in the ordinary position, and, like the arms, well formed. The extra pair of legs are near the arms, and, while quite well formed, are small. The feet on the extra legs are regularly formed, with toes and toenails. The child is robust and healthy, with all the facilities of an ordinary child.

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Associate yourself with men of good quality, if you esteem your reputation; for it is better to be alone than in bad company.—GEORGE WASHINGTON.

ALCOHOL IN MEDICINE

IT seems a difficult matter, even in the profession, to confine the study of the therapeutic uses of alcohol within a scientific scope, as one would do in the consideration of opium, atropine, strychnia and other poisons, which are used by the profession in the treatment of disease. In the first place the subject must be approached in a thoroughly unprejudiced condition of mind, for the time being, dismissing the results of abuses, and confining our attention to the absolute facts in the case. It is not likely that alcohol would be found so universally present in nearly every thing we bodily consume, if it did not subserve some useful purpose in the economy, and it should be the duty of every physician to ascertain what that purpose is, and the quality required by Nature in the healthy human body.

The prohibitionist has no place in this discussion, because he cannot consider the matter from an unbiased standpoint, and neither can he appreciate the difference between *use and abuse.*

In our experience, it is not an easy matter always, to be able to tell whether alcohol is indicated or not, but it is just as difficult to determine whether any other remedy is absolutely required, hence, an intelligent prescription must be based upon actual knowledge of the effect of the article prescribed, and the dose in which it may be exhibited. We shall have to admit that alcohol as well as other remedies is often given to patients without reason, which is an abuse through ignorance, and the same may be said of the dose. A thorough study of the physiological effects of alcohol would lead surely to a reduction in the size of the dose. If it were generally known that alcohol should not be used unless the heart needs stimulation, and that a flushing of the face is a contra-indication, the remedy would be less frequently employed, and a vast amount of harm would be saved.

It has been stated that the human race is becoming intolerant of alcohol, and if this is true, its therapeutic value in smaller doses becomes apparent.

There is no lack of scientific data upon which the modern therapeutist can base its employment, no remedial agent has been more thoroughly tested, and its characteristics and *modus operandi* are well defined. The test of actual experiment leaves no doubt that alcohol in selected cases will permanently and durably reduce high temperature and decrease the urea and the carbonic acid in the system. It is a mistake to administer alcohol in such large doses as is frequently done in fevers; it should only be given when there are a dry tongue and skin, no nausea, and no indication of cerebro-spinal lesion.

There is a large class of cases occurring in all ages and conditions in which there exists a weakened heart with unfilled capillaries, a condition revealed by the lack of correspondence of the impulse of the heart with the general rhythm of the pulse, in which alcohol in suitable doses is a wonderful boon. There are good physiological reasons why alcohol is of service after exposure to extreme cold, when it would be injurious if used during the exposure, and there is no doubt that in a given condition it increases the secretion of gastric juice and the movements of the stomach in the interest of digestion. On the other hand, under its abuse, we may observe the destruction of the gastric juice, impairment of the movements of the stomach, and perhaps complete inability to digest anything.

The therapeutist should be familiar with this dual action, utilize it in his practice, and he will succeed just in proportion as he individualizes his cases. No unprejudiced physician who acknowledges the results of experience, will fail to give this potent remedy the position it deserves in therapeutics, because it has been abused, as it would be absolutely wrong to do so.

The various combinations in which alcohol is found, also require careful study and individualization, as upon this will depend the food value to be obtained, alcohol alone possessing stimulating qualities only, acting simply as a substitute for food, when for some reason this agent will not be tolerated.

Action and reaction are important elements in the consideration of the dose, and repetition should not be practiced until the full effect of the previous one has exhausted itself.

The dose should never be large enough to aggravate the disease, and under no circumstances should it be sufficient to cause the unpleasant symptoms which are sure to follow under certain circumstances.

There is a great difference in individuals as to their susceptibility to the effects of alcohol, and the susceptibility of the same individual will vary at different times. We have noted these facts in many cases in a great variety of diseases, and have been able to ward off a fatal inanition by their timely application.

If time, space and the interest of our readers permitted, it would be interesting to study this agent at greater

length in its physiological bearing upon the human economy, but this would take us beyond the limit of our present purpose.

Therapeutically then, from our view-point, the primary and secondary effects of alcohol are so well marked as to furnish an excellent illustration of the reactionary power of drugs in general, besides exemplifying what widely differing results are obtainable from large and from small doses of the same agent.

The best authorities agree that alcohol is indicated in adynamic fevers with great prostration, dry, brown tongue and skin, tremulousness of the hands, wandering delirium, of a low, muttering character when the patient is left quiet, weakness, irregularity, dicrotism or softness of the pulse, and particularly feebleness or absence of the first sound of the heart. A sharp, weak, unequal heart beat is a warning that some of these symptoms may soon appear.

In this condition of impending exhaustion, with low temperature and inability to generate heat, stimulants become our hope, but they should be administered in moderation—even a single drop at a dose of the alcohol or its equivalent, being in some cases sufficient.

On the other hand, their use is clearly contra-indicated in febrile diseases with scanty, albuminous urine of a low specific gravity, and in cerebro-spinal lesions.

The delirium, mania and hallucinations caused by alcohol correspond very closely with conditions met with in practice from a variety of causes, and its application in small doses, in some of these, often prove of practical use.

Regarding the mode of administering this agent—as its effect upon the stomach is to quicken the movements of that organ, and to increase the secretion of gastric juice, it should be taken *with* the meal, and not *before* eating. If it increases the appetite without flushing the face, the patient will be benefited by its use. In some cases, it is best taken in small quantities, and even without food, on retiring at night, especially for its galactopoietic and for its hypnotic effect.

Except in the treatment of acute affections, I have not found it judicious to allow the same alcoholic remedy to be used daily for any considerable length of time. It is far better to have it frequently changed, so that the stomach may not become too much habituated to a particular article.

Alcohol in any form is seldom of service in that class of affections vaguely denominated hysterical. The very general practice of resorting to gin and similar spirituous compounds for relief from dysmenorrhœa and the multi-form troubles arising from ovario-uterine irritation, is always to be deprecated, as aiding in the production of the most serious and intractable chronic maladies.

Still more injurious and unnecessary is the indiscriminate use of alcohol for the relief of pain in general, for averting the consequences of every shock to which the organism is liable, and for dispelling attacks of faintness under any and all circumstances. The best rule in such emergencies is that which bids us follow the indications afforded by the pulse, which will always inform us whether an alcoholic stimulant is called for, or whether the patient would be better off without it.

In a case of apoplectic seizure, for example, no more noxious agent than such a stimulant could possibly be selected, for, instead of lessening the pressure upon the walls of the already distended blood vessels, it increases the impulse of the heart, and hence is liable to convert a slight attack into one of serious import, or to hasten a fatal termination when recovery is hopeless. It will be found of service, however, in the second stage of this lesion when indicated by the pulse.

The form in which alcohol should be administered must depend in any given case upon whether we desire to avail ourselves of its chemical, its caustic or astringent, or its physical properties. It may be given either by the mouth or hypodermically. If we wish to obtain its chemical effects, as in the case of poisoning by venomous reptiles, by the infection of diphtheritic micrococci, or by any other morbific agent to which it is inimical, then its administration in comparatively large quantities will be unattended with danger, and may even be carried to the very verge of toleration. On the other hand, if that long-lasting constitutional reinforcement be aimed at which is desirable in most affections, our doses of alcohol must be exceedingly minute—much more so than those in which it is usually employed. In such cases, as in all others calling for *specific* medication, we must be most careful to avoid any considerable aggravation from our use of the remedy.

We think it has now been shown to the satisfaction of every intelligent inquirer that alcohol, in its many forms and combinations, is possessed of wonderful efficiency for good as well as for evil; and that, while we are unquestionably bound to avoid the slightest risk of fastening upon our confiding patients the most tyrannical of habits, yet, at the same time, as scientific practitioners, we are also bound to make use of every effective instrument proffered us by Nature in their behalf—provided that we do so under whatever restrictions may be imposed by a thorough knowledge of our resources and the unbiased exercise of our reasoning powers.

Since writing the above the *Boston Medical and Surgical Journal for* March, 13, 1902, has reached us with a symposium on this subject pro and con. We are glad to see that Dr. F. C. Shattuck's experience coincides with our own. Dr. Shattuck says in conclusion, quoting Osler, and with which statement we agree, that "we are still without the agent which can counteract the gradual influence of the poisons which develop in the course of acute febrile diseases, such as typhoid fever, pneumonia," * * * "the chief effect of which is exercised upon the circulation. increasing the rapidity of the pulse and inducing a progressive heart failure. To meet this indication the general experience of physicians still points to alcohol as the most most trustworthy remedy." We would add that we interpret this to mean in selected cases.

THE ELEVENTH ANNUAL MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

THIS is a body of medical men taken from the army, navy and National Guard of this country. Its status, therefore, is essentially medico-military in character. There is no question as to the value of such an organization in its relation to the improvement of the respective military arms of the service. At the breaking out of the Espano-American war it was soon noticed that the equipment of the regular army medical service was to a certain extent antiquated. This cannot be said at the present time, for after a careful inspection of its armamentarium there can be no doubt that it is fully up in all that pertains to medical and surgical appliances with that of any nation in the world, and we might add also superior to any other nation in sanitation and hygiene. When orders were given by the Governor of New York to fully equip a medical department of the National Guard, companies and the various regiments in the State had for the surgeon's field case a collection of instruments several years out of date, as to numbers and construction. Dr. M. O. Terry, at that time Surgeon-General to the State of New York, was allowed to construct a new case which was approved by the Governor and adopted by the National Guard of the State. It was named by the Adjutant "The Terry Field Case." The old field cases in the State were sold to the United States Government. The stretcher devised by Dr. Terry in connection with the field case had a mechanical pillow which could be used in hot climates as a sun shade for the eyes. The army would make no mistake in adopting such a device even though the idea originated with a surgeon in the National Guard. In civil life the surgeon in active practice connected with hospitals and associating with other surgeons has greater opportunities for growth than the army surgeon who in most instances lives in isolated regions at some post or barracks. It is evident, therefore, that in this composite array of military medical men the discussion of questions and the association of its members there must be of inestimable value to the whole profession, but especially to the army and navy as in the National Guard there are men which the medical profession at large recognize as the most prominent surgeons in the country. The present session of the Association of Military Surgeons was of high standard as to the character and variety of papers read. They included a concise yet clear review of the medical and surgical history of some of the battles of the war of the rebellion and that with Spain. Great Britain sent one of its best surgeons who had spent over two years in service in South Africa. His remarks were very interesting. The Canadian service was well represented and Japan had two of her gifted sons, each of which presented papers creditable to their country. The representative from Mexico also presented papers to this convention showing painstaking effort and were most practical in their character. In fact, the literary and scientific part of the convention was a complete success, and when the papers are gathered together for publication, as we trust they will be, will form a very valuable provision to the medical and surgical literature of the world. One of the charms of this organization is the social side of it. Whenever the meetings are held a hearty welcome is always given to the association. On this occasion the government placed at the disposal of the society the government boat "Dolphin," half a day being given up for a pleasure trip on the Potomac.

THE SARATOGA MEETING

THE meeting of the American Medical Association, of which so much was expected in the direction of unification of the profession in this State, has passed and some of its results we will try to portray.

We asked a commercial man who was present, how the meeting struck him, and his reply was "it is two-thirds pic-nic and one-third medical politics, with a little science mixed in here and there." While this might be the impression made upon the superficial observer, no one who attended the meetings of the sections could reach such a conclusion. It is natural that amongst so large a number, there would be many with whom the social part would be uppermost, and outside the scientific meetings, there was an air of enjoyable sociability, and in some quarters medical politics. Those who attended for purely scientific purposes had ample opportunity for exercising themselves in the various section meetings which were being held.

The meeting as compared with others was only fairly successful as to numbers, social *éclat*, and scientific attainment, we were told. Our own impressions based upon conversation with the large number we met personally was that there is a tremendous upheaval going on in the direction of liberal progressive medicine. No one could have listened to Dr. Hare's remarks on the use of aconite and digitalis in cardiac lesions without being struck by the wide difference of view as compared with that of even a decade ago. His ringing words in condemnation of large and long-continued doses of digitalis struck the key-note of the future, and his insistance upon the individualization of these cases was in exact accord with what we have so often contended. His use of aconite also in small doses, was equally intelligible, and no one attempted to question the position he assumed. Of course there was much said in papers and in discussion, which could be criticised, some even sharply, but there was so much of excellence, that on the whole, we ought to feel encouraged at the progress that is being made along the line of therapeutics.

We were sorry not to have heard more on the subject of drugs and their uses, and it is a mistake to report cases without reasons for the use of remedies employed. It is not enough in these days to say that "the usual treatment was employed," we want to know the dose as well as the indications upon which it was given, then these reports may be made of real service.

Therapeutics has not kept pace with pathology, the latter subject being far in advance of the former. When the subject of the remedy shall be studied with all the analytical care accorded to diagnosis, then we shall be able to do far more in the direction of cure than can be done at present.

The scientific part of the proceedings was said to be up to the usual mark, by those competent to judge. If Dr. Billings' address had been delivered in one of the large parlors instead of in a one-fourth filled barn, those of us fifty feet away from the speaker might have heard what he said, but as it was, only a few could catch an occasional word.

The registration of only fifteen hundred members, was a damper upon those who hoped to see the old code sustained. The only action toward unification of the profession in this State was the appointment of a Committee on Revision of the Code of Ethics which will report next year. Much will depend upon the action of this committee. There can be no doubt as to the position of the members of the State Society, they will stand by their record, are not begging for recognition, and did not attend this meeting to any extent. If the American Medical Association is to continue, it must place itself upon a basis so broad and Catholic, that all unsectarian medical practitioners in good standing can find lodgment there. There should be no attempt to make it a close communion affair, neither should it seek to become a part of the National Government. It might be better to broaden the organization so that it would be similar to the Social Science Association.

Dr. Frank Billings was elected President for the ensuing year, and the next meeting will be held at Hot Springs, Ark.

THE PATHOLOGY OF DIABETES.

THE fact that a form of glycosuria can be induced by the action of the active principle of the suprarenal gland, adrenalin, subcutaneously administered, was established some years ago by the observations of several independent experimenters. It was reserved, however, for Dr. C. A. Herter, as a result of his recent researches, to throw a clearer light upon the underlying causes of this phenomenon. In a paper read last month before the New York Academy of Medicine, he shows how he was led to believe that the increase of sugar in the urine which followed the intra-peritoneal application of adrenalin, was due to the local action of the remedy on the pancreatic cells. This he succeeded in proving by a new mode of physiological experimentation, namely, the direct application of weak solutions of the drug to the pancreas itself by means of a brush. This painting of the pancreas always gave rise to largely increased amounts of sugar in the urine, while similar applications to the spleen, the liver, the kidneys and the viscera produced no such effect. The pancreas, at the same time, became of a deep red color, contrary to the well-known blanching action of suprarenal substances. Failing to account for this peculiar effect of adrenalin upon the pancreatic cells on the ground of its vasomotor action, or of increased blood pressure, Dr. Herter based the conclusions he finally arrived at upon certain observations made by Geppert ten years ago, in connection with cases of poisoning by hydrocyanic acid. The appearances in question were proved to depend on the inability of the cells to take up oxygen from the blood. Following out this idea of impaired oxydizing capacity, Dr. Herter proceeded to apply reducing substances—such as carbon monoxide, benzyl-alcohol, and many others—directly to the pancreatic cells by his method of local painting, and with the almost invariable result of inducing marked glycosuria. Adrenalin being known to contain bodies resembling pyridin, he next applied weak solutions of this alkaloid to the pancreas and obtained a slight glycosuria; other substances, having greater or less reducing power, gave rise to more or less glycosuria proportionately. On the other hand, applications to the pancreas of strong oxidizing agents, such as potassium permanganate, chlorine water, chromic acid, and hydrogen peroxide, were not followed by glycosuria.

It may be regarded, therefore, as almost a necessary inference, that diabetes is caused in large part if not wholly by a diminution of the internal oxidizing power of the pancreatic cells. As the *Medical News* explains it, in an article from which the foregoing statements have been condensed, "There is probably a loss of relationship in many instances between the amount of reducing substances in the blood, some of which are manufactured in the suprarenal gland, and the oxidizing power of certain enzymes elaborated in the cells of the pancreas."

SURGERY OF THE HEART.

SINCE the pericardium of a living man was first laid open by the knife some years ago and a deep wound in the walls of the heart itself successfully stitched up, no further surgical progress has been attempted in this direction. A distinguished physician, Sir Lauder Brunton, performed, however, a series of experiments on the lower animals lately, with results which, he thinks, lend support to the idea of operating upon the pulsating human heart for the relief of the contracted mitral orifice. His plan, as described in the *New York State Journal of Medicine*, is to expose the heart by incisions from the left edge of the sternum, outward along the edges of the third and fifth ribs, connecting the outer ends by a cross incision and dividing both the soft structure and the fourth and fifth ribs. The trapdoor thus made is turned back on the sternum and the heart is exposed and the pericardium divided.

For the division of the valves of the heart a knife, like a tenotomy knife, is used with a cutting edge of about one-half inch. The valve is divided with comparative ease through the thickened edge, thus elongating the natural opening. He has not yet decided whether it is best to operate from the left side of the auricle or that of the ventricle. The knife is not much thicker than a needle, and yet it is surprising to read that the incision

of the ventricle rarely gives rise to any hemorrhage. The knife is introduced during diastole to prevent wounding the opposite wall of the ventricle and the pericardium is left open to allow for drainage.

He has operated in this manner upon healthy valves in the heart of cats, as well as divided, *post mortem*, stenosed valves in diseased human hearts. In view of the good results already obtained from the surgical treatment of wounds of the heart, Sir Lauder is encouraged to hope that in time mitral stenosis may be operated upon with equal success. The surgeon, in his opinion, would be justified in this procedure, although the risk it entails "naturally makes one shrink from it." Yet, in some cases "it might be well worth while for the patient to balance the risk of the shortened life against the certainty of a prolonged period of existence which could hardly be called life, as the only condition in which it could be continued might be to him worse than death."

For a mere physician to make such a suggestion as this, is, no doubt, much easier than it would be to find a surgeon bold enough to act upon it, or a patient willing to allow cardio-puncture. And yet who can say that it may not possibly turn out here, as it has done in other fields of operation till recently unthought of, that the first step was the only formidable difficulty?

THE NECESSITY OF DIAGNOSIS IN TUMORS.

THERE has never been any dispute in the medical profession, great as has been the diversity of opinion on other subjects, about the importance of making the diagnosis in tumors as quickly as possible. If we are able to determine from the start whether a tumor is malignant or not, it is of the greatest value to our patients; for undoubtedly it is in the early stage of a malignant tumor that it is the proper time to operate. Of course, there is the converse proposition, that we should not expose a patient to an operation in the case of a benign tumor. The tendency of the day has been to depend upon laboratory methods for the diagnosing of tumors. There are many cases in which clinical investigation cannot be depended upon for a diagnosis, and yet, the microscope is often in itself misleading. For example, there are tumors in the larynx which may be either carcinomatous in character or hyperplastic tubercular ulcers. In the rectum there may occur tubercular fistulae, syphilitic ulcers or polypi. It is by the use of the microscope rather than by clinical examination that it is possible to make the diagnosis in these cases.

The difficulty in microscopic section occurs in the incipient form of tumors, when the question arises before the tumor is fully developed; for example, whether an ulcer is carcinomatous in character or syphilitic, or whether a wart-like growth is cancer or not. In the first place, the specimen must be cut in such a way as to render it suitable for examination. In the case of small tumors enough of the disease should be taken along with the body of the tumor to show the change in the normal tissue. If possible, small tumors should be removed entirely and placed at once in a concentrated aqueous solution of the bichloride of mercury. Keep small pieces of the tumor immersed in this solution for an hour, then place them in alcohol. Such pieces may be allowed to remain for two hours but not much longer or they will become hard and brittle. Therefore, it is well, if they are larger, to divide them. In larger tumors it is well to fix but a small portion and to preserve the rest for subsequent examination. For example: One small piece should be placed in the concentrated solution of bichloride and the rest laid aside for subsequent examination. When it comes to the microscopical examination, it is well to study the origin of their transition into normal tissue. Sections should therefore be made in such a way that the knife passes perpendicularly to the base of the new growth and not parallel to it. If the tumor is large it does not matter so much which way you cut it. But it is well to examine at least three regions of the tumor, taking from the base, from the periphery and from the center. At the periphery and at the base the zone will be found in the youngest parts and the center will be the older part.

It requires frequently a considerable experience to make the proper diagnosis even when the greatest precaution has been taken. It is of importance to prove that the tumor is growing down in other tissues, that is, it is destroying and dissolving them. This is particularly true in the case of carcinoma.

In the question of the clinical diagnosis of tumors we find that much can be made from the history of the patient; for example: An old smoker complains that he has pains in his tongue, which interferes with his eating with comfort. He also has lost flesh, and seems to be in generally poor health. On examination of his tongue a painful spot is found upon it which seems to be an ulcer with puffed-up irregular edges. Possibly there is a sharp molar tooth which corresponds to this spot. It is possible that this irritation is due to the condition of this tooth, and it should be drawn. If the ulcer shows no tendency to recover, in fact, if it grows larger consider the question whether it is due to the habit of smoking a pipe. Now, the question of cancer of the tongue is a serious one; and it is well to consider whether this ulcer is tubercular in character or not. Examine the man's lungs for tuberculosis; examine his sputum for tubercle bacilli; take some of the secretion of the ulcer and if no bacilli are in it, then, from the margin of the ulcer cut out a small piece for microscopical examination. It may be you will find hypertrophy of the mucous membrane, infiltration of the connective and muscular tissue and deeply placed within you will see typical tubercles with giant cells; and yet, on staining the sections for tubercle bacilli, you may find none. Yet you have been able to make a diagnosis properly. Again, you may examine a man who complains of nasal obstruction and you find in the nose a tumor which you remove and diagnosticate as a polypus. In a short time, however, the patient is suffering again with his old

trouble and once more the growth is removed. By this time, possibly, you have grown suspicious and you cut sections for microscopical examination and you find that the tissue consists of true spindle-shaped cells illustrating a typical form of sarcoma. Then you realize that it is your duty to operate quickly and as thoroughly as possible. It has been only by means of the microscope that you have been able to make out the case.

THE RESPONSIBILITY OF A PHYSICIAN WHERE HIS PATIENT DECLINES CERTAIN TREATMENT.

THERE is, undoubtedly a difference of opinion in the profession as to what a physician or surgeon should do if a patient after a plain statement of facts, should decline to follow the course of treatment advised, or refuse to be operated upon. On the one hand there are physicians who say they would at once retire from the case and leave it to be handled by other physicians, and on the other hand there are physicians who say they would feel under the circumstances they should do the best they could after having the patient to understand that he and his family assumed full responsibility for the result.

The courts have passed a number of times upon this question. One of the most important of these cases is that of McCandless vs. McWha. This was a case in which the patient sued his physician for alleged malpractice in the setting and treatment of his broken limb There were a number of questions involved, one of them was the question of the coöperation of the patient in the treatment. On this point the court stated "Nothing can be more clear than that it is the duty of the patient to cooperate with his professional adviser and to conform to the necessary prescriptions, but if he will not, or under the pressure of pain can not, his neglect is his own wrong or misfortune for which he has no right to hold his surgeon responsible. No man may take advantage of his own wrong or charge his misfortune to the count of another. We do not mean to intimate an opinion that this case was properly treated or that the leg could not have been restored to the length of its fellow, but in view of the diversified circumstances that attend cases of this sort, it is very important that the true rule of professional responsibility should have been given to the jury with instructions that they should inquire from all the facts in proof whether the defendant had come up to or had stopped short of it."

On the other hand, if an operation has been declined by a patient or his friends, for rarely in strictly medical treatment, is the physician interfered with by a patient or his friends, the case still exists and must be handled by some one.

Undoubtedly, there are many forms of trouble in which an intelligent patient has every right to decline operation, for physicians themselves are by no means unanimous in their views with regard to the best methods of surgical procedure. For example in a case of cancer of the cervix, uterus or appendages, many skilful surgeons recommend operation in the early stages, claiming excellent results, while others with equal experience and equal judgment condemn interference where malignancy exists. So it is with many other conditions, but the physician must impress on the minds of his patient and his family that they must assume the responsibility if they reject his proposed line of treatment.

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This volume, the third in the series of English translations of the "Nothnagel System of Practical Medicine," needs no recommendation. Professor Jurgensen and Dr. Northrup are too well known for us to expect anything but the best, the article on Diphtheria, entirely original with the editor, is fully in keeping with the high standard set by the other German articles which comprise the work. Dr. Northrup, having been associated with Dr. O'Dwyer at every step in the perfection of intubation tubes, is particularly fitted to describe this aspect of the treatment of Diphtheria.

Prof. Jurgensen's monograph on Measles unquestionably is the most comprehensive contribution on that infection that has appeared, bringing out so fully the valuable Danish records of the Faroe Islands epidemic. His exposition of Scarlatina is unrivaled, both for richness of clinical detail and exactness and clearness of statement. "Fourth Disease" and German Measles have been accorded spaces consistent with their importance. The editor has shown judicious decision in his extensive additions, making the work far and away the best and the most up-to-date treatise of the subjects extant. The book is profusely illustrated, containing besides a large number of text cuts, twenty-four full page plates, three of which are in colors.

DISEASES OF THE NOSE, PHARYNX AND EAR. By Henry Gradle, M.D., Professor of Ophthalmology and Otology, Northwestern University Medical School, Chicago. Handsome octavo of 547 pages, profusely illustrated, including two full page plates in colors. Philadelphia and London. W. B. Saunders & Co., 1902. Cloth, $3.50 net.

This volume is intended to present diseases of the Nose, Pharynx and Ear, as the author has seen them during an experience of nearly twenty-five years. In it are answered in detail these questions regarding the course and outcome of diseases which cause the less experienced observer the most anxiety in an individual case, questions to which an answer is not easily obtained from text-books. In the therapeutic part of the work the author has given detail only to those procedures which have withstood the test of critical experience. Topographic anatomy being a requisite for all surgical

work, the author has wisely devoted liberal space to this branch of the subject. The numerous illustrations are exceptionally accurate in their portrayal of the pathological conditions, especially in the two full-page colored plates. We know of no work of its size that is at the same time so useful a text-book and so excellent a work of reference.

A Practical Treatise on Smallpox. Illustrated by colored photographs from life, by George Henry Fox, A.M., M.D., consulting Dermatologist to the Health Department of New York City, with the collaboration of S. D. Hubbard, M.D., S. Pollitzer, M.D., and J. H. Huddleston, M.D. J. B. Lippincott. 1902.

The most concise, comprehensive and best illustrated work ever attempted on this subject. In the form of a photographic atlas containing ten colored plates—9½ by 12¼ inches, representing typical cases of Variola in successive stages of the disease, also six black and white photographic plates showing unusual phases of Variola, Vaccinia, Varicella and diseases with which smallpox is liable to be confounded. Thirty-seven illustrations in all. The accompanying text is brief and eminently practical in character, treating of the symptoms and course of the disease, the characteristic points of diagnosis, and the approved methods of treatment. The chapter on Vaccination gives the technique of this operation, its incidental complications and the method of obtaining the most trustworthy virus. Beautifully printed, absolutely accurate in colors true to life, on specially made paper, and from new type.

Price in two parts, quarto paper covers, $3.00.

Minor Surgery and Bandaging, Including the Treatment of Fractures and Dislocations, the Ligation of Arteries, Amputations, Excisions and Resections, Intestinal, Anastomosis, Operations upon Nerves and Tendons, Tracheotomy, Intubation of the Larynx, Etc. By Henry R. Wharton, M.D. Fifth edition enlarged and thoroughly revised, with 509 illustrations. Lea Bros. & Co., publishers, 1902.

The author has given a very clear and concise description of the various bandages, surgical dressings and minor surgical procedures employed in the practice of surgery at the present time. Also the preparation and application of aseptic and antiseptic dressings, all of which are fully illustrated, included in the work there are articles on tracheotomy of the Larynx, Ligations of Arteries, and amputations. Bacteriology is recognized in a special chapter. The work will prove a very valuable handbook, not only to the Surgeon, but to Physicians in general practice. It is admirably written, concise and clear in statement and fully up to the times.

Correction—On p. 163, June issue, "Hydroferrional" should read Hydroferriomal, and on l. 24 from bottom of first column read *four drams* instead of "ounces."

—An up-to-date doctor has written to the London *Times* suggesting motor-car driving, "up to the legal limit," as a means of administering the open-air treatment to consumptive patients. He says he has been much struck by the beneficial effects produced by a 30 to 50-mile motor-car drive. Along with a feeling of marked exhilaration, an increased appetite and improved sleep, there is a heightened healthy glow which after a few days' treatment tends to become permanent. The tendency to cough is much diminished, and the treatment is very much appreciated by the patients.

CORRESPONDENCE.

FIGHTING AFTER THE PROTOCOL OF PEACE.

IN our last issue, we alluded with considerable enthusiasm to the significance of the holding of a session of the American Medical Association in the State of New York and congratulated the profession of the State on the settlement of old differences and on the reunion which seemed to be a foregone conclusion. We regret that our utterances were somewhat premature, although we still hope that a permanent adjustment of the dispute will be arranged within the coming year.

Among the most loyal and most active members of the national body have been men who have adhered to the New York State Medical Society, which is the oldest legally organized and recognized medical society of the country, which was the parent of the national organization and which has served as the precedent of all legislation in America, having as it purpose the restriction and formal establishment of medical practice.

We do not care to discuss the merits of the old quarrel between the State Society and the American Medical Association. It has been almost universally recognized that, whatever the decision on individual points of difference, there has been for several years no issue of opinion as to ethics or medical polity, which should divide the profession. In token of this realization, many members of the State Society have been accepted as members of the national body, for all scientific purposes, although they have not, except by an occasional informal ignoring of technicalities, been allowed the privileges of office or a vote, except in section business.

Without a hearing, without notice or warning of any kind, all of the members of the American Medical Association who had adhered to the State Society and who had refused to stultify themselves by holding membership in antagonistic local organizations, were dropped from the lists of participants in scientific programs and were refused all privileges of the national organization, except that of paying dues and of enjoying as intruders the public hospitality tendered to the most informal guest at similar great gatherings.

Some of the members thus unceremoniously dropped from the national organization had been chairmen of sections, two had represented the American Medical Association in the Pharmacopeal Convention, one had received the gold medal of the Association, nearly all had been conspicuous in the scientific work of the Association and many had received not merely the implicit and published invitation to prepare papers and to participate in discussions, but had been personally solicited to take an active part in the scientific work of this session. One had even been elected to represent his section in the newly established house of delegates. All of these gentlemen attended the meeting in good faith, not only to participate in the immediate scientific work of the Association, but to further the ultimate reunion of the profession of the state and the best interests of the national body. All were surprised to find themselves ignored. If they had been requested to stay away or to resign, or if they had even been notified of summary expulsion, the discourtesy would not have been so great. The only warning which any had received, was the threat from local opponents, absolutely unsupported by any authority, that they would not be received by the session unless they went as delegates from local branches of the New York State Medical Association. Of course, none were ignorant of the fact that their membership in the national organization was an-

omalous but they had been accepted or even urged into membership with a full understanding of the conditions, and, at this time, when even the terms upon which a reunion of the State profession was to be effected, were an open secret, they certainly had no reason to anticipate a less cordial welcome than at other sessions.

An informal meeting of the members of the state society was held and they wisely decided to take no action to vindicate their rights, but manifested the truest dignity by submitting without protest to the indignity. We know of no instance in which medical men have acted more literally in accordance with the Golden Rule. They had been struck an utterly inexcusable and cowardly blow upon one cheek and they meekly turned the other, setting aside all thought of self or of the organization which they represented, that the best interests of professional unity might be subserved.

It appears that neither the members of the American Medical Association from other states, its general officers, nor the rank and file of the New York Association, are in sympathy with the attempt to exclude the members of the Society. Indeed, the whole matter seems to be nothing but the expression of the animus of a few medical politicians who have disgusted their own adherents and who have furthered the already inevitable re-union of the profession by attempting to fight one more battle before peace was formally declared.

A "REGULAR" PHYSICIAN.

THE CLEVELAND MEETING.

THE fifty-eighth session of the American Institute of Homeopathy has been an unqualified success. Pleasant weather, a large attendance, and the unremitting attention of the local committee, combined to produce a meeting that will be long remembered by every one who was privileged to be present.

With the exception of one partly rainy evening, the weather was perfect—clear and cool enough for any amount of work and recreation and there was plenty of both.

The meetings were held in the Chamber of Commerce Building and were well attended. A large amount of business was transacted, notably the changes in the Constitution and By-Laws which had been proposed at the last meeting.

More than a hundred new members were enrolled. Nine sections submitted over fifty papers.

The discussions were general and instructive and the scientific work of the meeting was of the very highest order.

Over five hundred members registered, fifty of whom were Seniors, and some four hundred and fifty visitors added made the attendance the largest ever present with one exception.

The city of Cleveland sustained its reputation for hospitality.

Mayor Tom L. Johnson welcomed the Institute in a most kindly and cordial address and the profession spared no effort that could contribute to the comfort of their guests.

The local committee had provided for the ladies' entertainment that was almost continuous.

Drives through Cleveland's beautiful parks and boulevards, and luncheons and teas galore, left them no idle moments. The reception and ball at the Colonial Club was attended and enjoyed by all.

After a ballot, which was so close as to require one adjournment, the following officers were elected for the ensuing year: President, Dr. Joseph P. Cobb of Chicago; Treasurer, Dr. T. Franklin Smith of New York; Recording Secretary, Dr. J. Richey Horner of Cleveland. The choice of the place of meeting for 1903 was unanimous in favor of Boston or its immediate vicinity.

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SOMETHING DONE AND SOMETHING UNDONE.

THE clergy often speak of the vocation of medicine and surgery as next in helpfulness to their own, and shower encomiums on the devotion and self-sacrifice of those who follow it. The laity also indulge in much adulation and appear to regard it as a calling which opens a vast field for benevolent action. Much of the praise we receive is deserved; perhaps all of it; and yet one is not long in practice before he learns, that, though he may faithfully study his patient's interests and give most assiduous and skilful attention to them, his services are often undervalued, his best efforts minimized, and the outcome of treatment most mercilessly criticised. To be sure such ingratitude usually develops through ignorance, which though it mitigates the offense, but partially removes the sting. The effect on the physician is most unwholesome in that it is apt to drive him to a sordid view of his work through a sense of annoyance and chagrin at being undervalued. Much of the benevolent spirit is taken out of his work to the great detriment of both himself and suffering humanity.

An unfortunate effect of this nature would oftener be produced and the degree of it greatly intensified but for the relatively few kind and appreciative souls who come forward with true thankfulness, and by devotion express an undying gratitude.

Numerous instances of ingratitude have developed in my experience, but, as I greatly dislike to dwell on the unseemly side of human conduct, I shall mention but one or two examples of it.

A woman was brought to me a few years ago from Michigan by a physician whom I highly esteem, for the operation of hysterectomy, which was thought to be necessary in order to relieve her of *a pain which had confined her to the bed for four years.* She was brought from the train in an ambulance, and taken to the hospital, where I saw her a few hours after her arrival. She was accompanied by her husband.

When I visited her, to my surprise I found a woman of about twenty-six years, in a fair state of nutrition, with considerable color and an expression which betokened no serious illness. After going carefully over the case I could find no organic lesions of importance, certainly nothing which would rationally explain suffering of the kind and degree which had been described to me. The whole condition was evidently due to neurotic disturbance which could not be relieved by hysterectomy, but from under the power of which it would be necessary to extricate her chiefly by a process of education. Accordingly I declined to operate, but gave the assurance that relief could be obtained in a constructive, rather than a destructive, way. It was with difficulty that I could persuade the patient that the serious operation in question would not be required. Only qualified success in this direction was ultimately obtained. She expressed a willingness to stay for treatment provided the husband, John, could remain with her. Now John was a good-natured, easy-going sympathetic soul, the very kind in which a wife in distress always finds her chief delight; but, at the same time, the very kind to make and preserve invalidism. It surprises some to learn that affectionate indulgence is a relentless enemy of robust health; but it surely is.

"I will stay," said my patient, "but John has got to stay with me."

"Impossible," was my rejoinder, "John cannot stay. There is no place for him in the hospital."

"But he can find a boarding place outside," continued she with a persistency of purpose becoming a better cause, "and then he can be with me most of the time."

"No," I replied with equal determination, "John must go home to look after his work. He would be worse than useless here."

"Then I cannot stay."

"Then you must go."

"I don't see why you should be so unkind, I shall worry myself sick without John."

"Now, my dear woman," I went on to say, "it is useless for you to urge this point. You will be far better without John than with him. I do not deny you this request in deference to any whim of my own, but for your own good; and like an obedient child, if you have confidence in me you should defer to my judgment. John is a good man, but surprising as it may seem, too good for your good; too indulgent, too sympathetic. Let me have my way in this matter and you will not be sorry."

At last amid many tears and expressions of disapproval, she consented to John's departure.

I at once began a method of treatment which included drugs, instruments, and mental suggestion, with effects which at once became apparent. The delusions which had so long enslaved her began to melt under the psychic influences which I threw about her.

One morning, about a week subsequently, on visiting her I found the familiar look of settled discouragment depicted in her countenance. I knew that trouble was brewing just as surely as one sometimes knows that a storm is at hand from a glance at the face of the sky.

"Well, I'm going home," was the greeting which she gave in a sour and sullen way.

"Ah, when?" I enquired, not at all disconcerted.

"I have telegraphed John to come for me at once, and I shall start just as soon as he gets here."

This was delivered in a firm and resolute tone which plainly indicated that she was not easily to be dissuaded from her purpose. I could see at once that neither persuasion not threat was likely to avail, and, being somewhat nettled by her fatuity, I resolved upon a different course. I looked her fixedly in the eye for a moment, and then in a calm, but sarcastic tone, I said:

"That's right, I would go if I were you. It will be so nice to get home to the old bed, where you can stay in peace the rest of your mortal life. I don't see how you have borne absence from it so well. It will be very hard to stay here and be obliged to get out of bed every day, and finally to trudge about the corridors. Of course such a fizzle will discourage poor John; but he will be very patient with you. He will be delighted to have you happy, I know, whether your happiness means a life in bed or not."

The patient's face was a study during this brief invective, and before I ceased speaking she was in tears. But they were tears of violent vexation; and, in the midst of them, she indulged in a strong outburst of passion.

"I cannot understand such unkindness. No one ever spoke so harshly to me before. If John were only here I should go this very minute. Oh, dear; oh, dear, no one is kind to me here. I was a fool to come at all. I should have known better. I thought you were a kind man; Dr.—— said you were. But oh, no, you are cruel, cruel, cruel." This was followed by a period of hysterical weeping, punctuated with an occasional denunciatory epithet, all of which I took in the most complaisant manner, deeming it wise to hold my peace until the force of the storm should be spent.

"Don't you like to have me agree with you?" I enquired in quiet tones.

"I don't like to be scolded."

"Who has scolded?"

"You have!" and then another burst of grief.

"No, you mistake me, I have not scolded. I could see that you had made up your mind to leave us, and I did not like to thwart your purposes. I certainly would not have you stay to please me. Am I trying to get you well merely to please myself? Have you not as deep an interest as I? You must give me credit for believing that the course thus far followed is most likely to produce the desired result. Now, my dear woman, how would you feel, when planning and laboring to do another good, to have your plans opposed, your motives impugned, and, at the very time when you felt most encouraged, find that the one whom you were seeking to benefit had resolved coldly to forsake you altogether? Tell me, what would be your feeling?"

While I was thus addressing her my patient covered her face with the bed clothing, and, at the end, her piping voice, somewhat mellowed and much muffled by them, replied:

"Well, how long do you think I shall have to stay?"

It was at once evident that she was yielding the point and I gradually assumed a soothing air.

"That's a good girl, I knew you would take a rational view of the matter. I have counted very much on your good sense and have not been disappointed. It will—"

"I haven't promised to stay," she testily interjected.

"No, no, I want no promise. Your good sense is a sufficient guarantee. I shall not keep you long if you continue to improve as you have improved during the past week. Just see! When you came here a week ago you could not sit up without great pain, and now you can be up for an hour at a time without suffering."

"Yes, but I have had *some* pain."

"Very little, my dear woman, and latterly none at all, as you have been willing to admit. When you came you did not sleep nor eat well, and certain functions were apparently dead. Already conditions are rapidly changing, and in a month you will be a new woman. Can you afford to stay, think you?"

In three weeks this woman went home comparatively well, and, till recently, as I learn, has done her own housework, apparently hearty and happy. She ought to have been grateful; but was she? Let the following letter, written two or three years subsequently, answer.

——, 1900.

"Dr. Leavitt,

Dear Sir:

I have not felt well lately and the doctor that I went to says that I ought to have my uterus removed. That is just what I always thought, and I can't understand why you refused to take it out. After wasting all this time I suppose I shall have to go through the operation. When I was sent to you I thought you knew your business, but I find that I was mistaken. What can you say for yourself?

Respectfully yours,"

It was evident that the power of my suggestion, after some years had failed. She had fallen into the hands of a Philistine. There was no use to attempt at so great a distance, to rescue her, and therefore I made no response. At that juncture discreet management could

have saved her from total downfall, and could then have set her on a higher plane of health. I know nothing of her subsequent history, but greatly fear that she has again become a total nervous wreck.

Chicago, July, 1902. SHELDON LEAVITT, M.D.

GOAT-MEAT.

THE present anxiety concerning the high price of beef and the statement that horse meat is being supplied in restaurants in Boston and elsewhere reminds us that the goat industry will soon be largely cultivated as a solution of the present perplexing meat problem. It has been stated that at present large quantities of horse meat are exported from this country to Europe, Asia, and Africa. The meat of the horse has been sold in large quantity in Paris for many years and the sign Horse Meat Restaurant or Restaurant for Horse Meat has been well known for a long time. Those of us who believe that the incomparable hygiene of the Bible came from Divine inspiration and has stood the test of thousands of years unchanged and unchanging in majestic wisdom will *refuse* to eat the meat of the horse forbidden by Divine decree. Much of the western *mutton* is half goat. There is no meat more wholesome than goat meat, either for invalids or children. It possesses strong anti-tuberculosis properties and is especially suitable for those who require meat above suspicion and easily digested.

We are short millions of goat hides in this country for shoe manufacturing purposes. We have millions of acres of poor useless land suitable for goat raising. The keeping of goats for profit has been fully written about and explained. The cheapest labor will answer for goat shepherding, and the purchase of grain and hay, except in winter, is very inexpensive for goats. They will subsist on poor pasturage, while they are ridding it of worthless and even injurious weeds. Land almost valueless has been redeemed and made fertile by goats. The industry of goat raising would give employment to many, and the use of goat's milk and meat for strumous and tuberculous patients would prove to be of the greatest value.

Here is a chance for many men to enter into a large and profitable business. Most every avenue of trade is clogged and overfilled with too much attention and push. Goat industry is hardly known to many successful farmers. Goat milk is delicious and strengthening, and its use for little infants is most common in Europe. Every part of the goat is useful; the milk, the flesh, the blood for subcutaneous injection in wasting diseases, the hair for cushions and plush cloth, the horns for knife-handles, and even the intestines for fertilizers. The present time offers a splendid field for an important industry with very large return, financially. In olden times goat meat was considered an extra delicacy at great court banquets. Now butchers pretend to have a horror of having *any* in their stores, and yet horse meat is likely to spread and keep goat meat away from the market. Many a little child suffering from tuberculosis and scrofula could be *saved* if goat's milk and meat and blood were used rationally as a means of cure. The prejudice against goats is frivolous, and for the good of our countrymen, let us hope, will soon cease to exist. A stock of the best breeds of goats can be found in this country, and therefore it is not necessary to import expensive specimens.

W. T. P.

—Sixty-five physicians live in Chestnut Street, Philadelphia.

RETROSPECTIVE THERAPEUTICS.

A Powerful Diuretic.—Although the materia medica abounds in drugs having a diuretic action but few of them can be considered pure diuretics, the majority producing their effect in an indirect manner. Among the pure diuretics theobromine has been extensively employed in late years in the form of the salicylate. This preparation, however, is not free from irritating effect upon the gastro-intestinal tract owing to the contained salicylic acid, and for this reason Dr. Impens, of Brussels, after considerable experimentation succeeded in producing a double salt of theobromine sodium and acetate of sodium, to which the name agurin has been given. This preparation has been made the subject of extensive clinical studies in the clinics of Professors von Litten of Berlin, Destree of Brussels, Buchwald of Breslau, and Von Ziemssen of Munich. The results of these tests have shown that in the dropsy of cardiac disease, agurin is a prompt and reliable diuretic free from any irritating effects upon the digestive organs or kidneys, while in some cases of ascites due to cirrhosis of the liver and in cases of edema from chronic interstitial nephritis, without marked destruction of the renal epithelium, the drug acted efficiently. The diuretic value of agurin is further confirmed by some conclusions presented by Dr. A. C. Barnes (*Medical Record*, May 24, 1902) in a discussion before the American Therapeutic Society, according to which the acetates form double salts with theobromine, which are soluble and are powerful diuretics, of which agurin is a type.

Asylum Dysentery.—Institutions of all classes are subject from time to time to epidemics of dysentery, those which suffer most are the havens of chronic patients, insane or otherwise. P. W. MacDonald (*Lancet*, March 1, 1902) reports an incipient epidemic in the Dorset County Asylum in 1900, which he checked in the following manner: Injections of permanganate of potash were resorted to as soon as the case was diagnosed. The lower bowel was washed out, night and morning, with a solution containing from two to four grains of the permanganate of potash to the pint of water through an ordinary syringe. The motions rapidly lessened and the treatment had seldom to be prolonged beyond the third day. Recovery was universal, although some of the cases were very severe. Moreover, the epidemic did not spread to a large number of patients. The drug seemed to act in its double capacity of disinfectant and styptic. In the more severe cases milk was found an undesirable article of food, appeared to increase the intestinal irritation, and was rejected in favor of beef-tea and rice. One of the patients died of pneumonia after recovery from the dysentery, and at the autopsy it was found that the colon showed a large number of healed ulcers of recent date.

Sodium Sulphate as a Physic.—Dr. Chadwick says that a good remedy, quite forgotten by many as a prompt physic, is sodium sulphate. It not only empties the bowels effectively and promptly, with the least possible disturbance, but a laxative effect follows for three or four days after. Dissolve a teaspoonful in a glass half full of hot water, which can be cooled if more desirable to take. There is nothing so important in the beginning of any disease as a clean prima via—but in accomplishing this object you must do it with as little irritation as possible, and for this sodium sulphate is the remedy.

Treatment of Uterine Discharge by Brewers' Yeast—Dr. Neves, of Lisbon (*Trib. Med.*), communicates the results of a series of cases of gonorrheal or non-gonorrheal discharges from the uterus treated by means of brewers' yeast. In all cases there was cure or,

at least, great amelioration. It is best used fresh, and not alone, but as an adjuvant to other measures. The flow soon diminishes, loses its purulent character, and ulcers cicatrize.

Crude Petroleum for Fecal Impaction.—Phsicians of the oil regions have found out by experience (*Amer. Med.*) that the common crude oil as it comes from the wells is the best solvent known for the disintegration of hardened fecal masses, so that they may become movable. There is no fecal mass which it will not penetrate and soften. One quart of the oil should be introduced through a colon tube and allowed to remain for twelve hours. There is usually no trouble about its retention. This treatment has been found to succeed after the most energetic use of water and sweet oil and glycerine failed to give relief.

Cinnamon Water as an Antiseptic.—Oil of cinnamon (*Med. World*) in aqueous solution acts like magic as a local disinfectant. In a recent wound of any kind, after stitching or whatever may be needed, keep a compress wet with cinnamon water constantly applied until healing is complete, which usually takes place without suppuration. It takes the place of corrosive sublimate, and everything else. It is pleasant to use, cleanly, nontoxic, safe, and cheap. As a douche after parturition it is ideal, not often requiring to be used more than two or three times. I add three or four drops of the oil of cinnamon to two quarts of warm water, and direct it to be used as often as there is any scent to the lochia. In nasal catarrh it serves well, and in fact wherever a germicide and disinfectant is wanted.

Carbolic Acid in Surgery.—"Given three facts—First, that infective diseases are dependent upon pathogenic germs; second, that 95 per cent. carbolic acid is an infallible germicide; and, third, that 95 per cent. alcohol is a perfect antidote for carbolic acid—we have three propositions which, followed to their natural conclusions, lead us to the unassailable position that in carbolic acid properly used we have an absolutely safe and sure remedy for every single disease of microbic origin." Such is the thesis maintained by Dr. Seneca D. Powell in the *American Journal of Surgery and Gynecology* for April, 1902. Incidentally, he vigorously asserts his claim to exclusive credit as the first to discover and demonstrate "a means of rendering the use of carbolic acid in any strength comparatively free from danger—thereby placing before the profession a remedy for diseases heretofore almost incurable."

The medical profession, Dr. Powell says, has been led to believe that carbolic acid, even in its weakest solutions, is a very dangerous remedy, because so easily absorbed, and thus giving rise to gangrene; "yet, in the next breath, we are told that a 2-per-cent. solution is almost inert, and is not a germicidal solution." He has seen, however, but one case of carbolic acid poisoning from absorption by the use of wet dressings, and no harm came from this case. In every instance he has seen of so-called "carbolic poisoning," he has found the diagnosis wrong, and that the continued use of the remedy was followed by no bad result. He has a record of seven cases of internal poisoning by carbolic acid, either from intent or otherwise, whose lives were saved by administering but twice the amount of alcohol as of carbolic acid. It is also a well established fact that when carbolic acid is mixed with whiskey or brandy, it will not kill.

He has found in his experience a very great difference in the results obtained from the different "brands" of carbolic acid on the market. The carbolic acid he has found the most satisfactory is that made by Calvert of England and known as Calvert's No. 1. With this acid there is no question as to the terminal result when properly applied. Its high price stands in the way of general use in hospitals, but it more than repays the extra cost, in his opinion.

The article concludes with directions as to the surgical employment of carbolic acid in ivy poisoning, gonorrhea, erysipelas, lymphangitis, abscesses, septic uteri, mastoid disease, and empyema. The proportion of the drug used in most of these diseases is one drachm to the ounce, or else a 5- or 2-per-cent. solution. Erysipelas requires 95 per cent. of the acid, and it will probably be the most severe test the surgeon will be called upon to make—that is, from the surgeon's standpoint. He must always follow directions closely, for damage may result from a failure to observe this.

"I manage it this way: Placing the patient flat on the back, with the head placed so as to present as nearly as possible a level surface of the face, I apply a 95-per-cent. solution of carbolic acid with a well-rolled mop of absorbent cotton. I watch the surface carefully, and as soon as it turns white I swab it off with alcohol. Material should be at hand and readily available, and one should depend upon his judgment as to when the alcohol should be applied, and not upon the complaints of the patient. I paint the surface about the eye with pure acid, holding gauze pledgets in between the closed lids to prevent the acid entering the eye. One must be very careful not to allow the alcohol to be brought into contact with any part of the surface before the acid is applied, as it will prevent the acid from acting on that surface. In this way not only the entire face, but all of the surface involved by the disease can be treated. A larger mop of cotton must be used so as to go over the surface rapidly and completely. Then in some cases it will act so quickly as to compel one to do it in sections, not only covering the diseased surface, but going over the line one inch or more; especially does this apply to the treatment of erysipelas in locations other than the face. I have applied carbolic acid in this way to the entire body from the nipple-line to just above the knees on a girl about twenty years of age, reducing the temperature from 106° to normal in four hours. The action of the acid in these cases is uniformly and promptly successful.

"Since adoption of this plan we are no longer afraid of erysipelas in our general wards in the Post-Graduate Hospital, and we retain these cases in adjoining beds to other surgical cases. This method is in use in the erysipelas wards in Bellevue and the City Hospital, and I have it directly from those in authority that it has yet to record a failure."

Treatment of Follicular Tonsillitis.—The plan pursued by Chas. W. Dulles, as outlined by him in the *Philadelphia Medical Journal* for January 11, 1902, is to act upon the bowels with small doses of calomel and soda (one-tenth and one grain respectively) every half hour, at once if the patient is seen in the morning, but not until next morning if the patient is seen in the evening. At the same time he orders a saturated solution of boric acid to be used as a gargle, or more properly, as a wash to the throat, by taking some into the mouth, protruding the chin, and gently applying the tongue against the lower teeth so as to allow the solution to rest upon the surface of the fauces. For very little children he orders instead the administration of lime water every hour through the day. The object of these solutions is to hinder the development of micro-organisms and their products in the fauces and to avoid the necessity of measures which are very trying to little children. The re-

sults obtained by this simple treatment combined with attention to matters of warmth and diet, have been so excellent that the author has very little trouble in managing cases of follicular tonsillitis, and he has been equally fortunate in a similar management of cases of actual diphtheria.

In some older persons, where there is a great deal of pain connected with tonsillitis, he has found it of great advantage to administer salol and phenacetine, or salophen, in sufficient doses. This seems to lessen the pain very materially, and apparently acts upon the systemic condition present in such cases.

A most important point in the treatment of this, as of other diseases, is to give a rest to the digestive tract, which shares in the variance from health. In tonsillitis, it is a rule with Dr. Dulles to have no food given until and except when the patient, if old enough to speak, asks for it. Infants can, and usually do, arrange this exemption for themselves. So he finds that almost no medication, almost no food for a while, and the mildest sort of an antiseptic solution applied to the fauces in a simple way, is followed by such prompt recovery that follicular tonsillitis soon passes away without giving much trouble.

Creosote in Tuberculosis.—J. A. Burroughs (*Jour. A. M. A.*) presents the following conclusions from an experience of nineteen years: (1) Selection of a creosote made by the double distillation of tar from beechwood is essential; (2) large doses continued indefinitely do not irritate the stomach, but improve digestion; (3) large doses are appropriated by the system, as shown by clinical observations; (4) the drug in large doses is indicated in all stages of the disease; (5) for permanent results the drug in large doses should be continued for months after the absence of all physical signs or constitutional disturbance; (6) creosote in large, continued doses is not only the most rational treatment, but gives the best clinical results of any one agent familiar to clinicians.

The Electrical Treatment of Phthisis.—Lagriffoul and Denoyés (*Archives D'Electricite Médicale*) have shown that, in the case of tuberculous lesions experimentally induced in the guinea-pig, the action of high frequency currents is to retard or greatly mitigate the development of the disease. In the untreated animals which were used as control, the lesions revealed post mortem were much more extensive and more advanced than in those treated electrically. The treatment was effected both by auto-conduction and the "effluve," and of the two they found more benefit to follow the effluve moderately applied. Chisholm Williams (*British Med. Journal*), in a paper on the treatment of phthisis by currents of high frequency and high potential, gives the results of the method as applied to forty-three severe cases of pulmonary tuberculosis in the human subject. Of these forty-three patients, forty-two put on weight and lost all symptoms, except in some few a slight cough. The average duration of the treatment was three months, and the sittings were from ten minutes per diem upwards.

The Use of Electricity in Sprains.—Drs. Charrier and Planet have called the attention of the French medical public to the advantages of using electricity in sprains. Apostoli recommended employing the Faradic current with very rapid interruptions. The electrodes should be of carbon covered with chamois skin, and, while the positive tampon remains in one position, the negative one is moved all over the painful area. The results would seem to be surprising; after five minutes the patient is able to get up and walk, the pain having ceased for the time being. Two applications should be made daily, and the patient told to walk as soon as possible.

Glutol in Preventing Pitting of Smallpox.—John Moir, in an extract occurring in London *Lancet, Jour. Am. Med. Asso.*, states that glutol is a whitish powder, prepared by exposing sheets of gelatin to the vapor of formalin. The solvent action of glutol is facilitated by the addition of lard, and by application the gelatin is dissolved and formalin liberated. He recommends it in suppurative conditions of the mouth, gums and tongue, carcinoma, tuberculosis, severe burns and chronic ulcers. But he especially recommends it mixed as follows, as a preventive of severe pitting and deep scars from smallpox:

℞ Glutol.....½ oz. to 1 oz. (15-30 grms.)
Paraffin (soft).....4 oz. (120 grms.)
M. Sig.: To be applied locally.

The same proportion has been employed in carcinomatous and epitheliomatous cases as well as in severe burns. It is entirely harmless as an application in diseases of the mouth, even when swallowed in considerable quantities. It has been employed by others with marked success in the treatment of warts, chancroid growths, and in sycosis vulgaris, although it took more time than most remedies, but it was easily handled, did not cause pain, and left no scar.

RETROSPECTIVE DIETETICS.

Forced Feeding and Underfeeding.—Van Noorden, in *Deutsche Klinik*, February, 1902, takes up the subject of forced nutrition, which is indicated in the following diseases: (1) in chronic wasting diseases. (*A*) Tuberculosis, in which it places the patient in the best condition for cure and in which it is the best prophylactic age in children and adolescents predisposed to it. (*B*) In syphilis, the later stages of which are regularly associated with a loss in the body substance. Many old, obstinate cases of tertiary syphilis lend themselves to speedy cure when the nutrition is pushed. (*C*) In diabetes mellitus experience teaches that good nutrition is capable of warding off many of the dangers of this disease, as is likewise the case with diabetes insipidus. (*D*) Forced nutrition is of eminent value in Basedow's disease. (2) In functional nervous diseases, including neurasthenia and hysteria, which respond well to increased nutrition. (3) In all individuals with poor bodily nutrition. The author then discusses the indications for underfeeding. In the treatment of obesity, three different grades must be distinguished. (*A*) In extreme obesity the extent to which the diet should be restricted depends on the age of the patient. With children and adolescents up to the twentieth year, one should be satisfied to oppose the accumulation of fat only at intervals, and then only in periods of from four to five weeks in duration (intermittent obesity cures). In old age obesity cures should be avoided, for they are followed by rapid collapse of the strength. (*B*) Medium grades of obesity, in which the individual weighs from fifteen to twenty-five kilograms above the normal, respond best to treatment, but in these the same precautions should be observed as in the others. (*C*) Moderate grades of obesity demand no fat cures, but an attempt should be made to prevent the further accumulation of fat. There are indications for the reduction of fat in diseases which it complicates, as diseases of the heart, arteries, kidneys and lungs, and in chronic articular rheumatism, in gout, and in diseases of the organs of locomotion. Functional

nervous diseases that are associated with obesity are benefited by a restricted diet.

The Recommendation of Alcohol.—We believe (*Jour. Am. Med. Assoc.*) that the consensus of the best medical opinion of to-day is that alcohol, while a valuable medicine in some conditions—and here many would include a limited dietetic value—is not properly a food. It is not what the Germans would call a *Nahrungsmittel*, but is a luxury and a perfectly non-essential one to the healthy normal individual. The need of moderation in the use of alcohol and the difficulty in drawing the line between moderation and excess, together with the habit-building tendency, have all to be considered. The worst thing about the present tendency to say a good word for alcohol is the certainty that whatever may be said will be utilized unscrupulously by advocates of the liquor interest. Give them an inch and they will take a mile, and some of our confrères have had good reason to regret this fact. We believe it will be found far safer for medical men to stand on the facts opposing the general use of alcohol than to even qualifiedly advocate its usage, except exclusively as a medicine and under medical prescription. Its cause is not one that requires any fostering by our profession.

Prochownik's Dietary for Dystocia.—A German physician has recently directed attention to the value of the regimen prescribed by Prochownik, employed as a prophylactic measure in cases of narrow pelvis, or with women in whom dystocia has been due to the large dimensions of the fetus (*Med. Age*). This regimen, which was inspired by the practices of some old French obstetricians, exercises an influence on the nutrition of the fetus, temporarily arresting its growth, and so enabling it to pass easily through the contracted pelvis strait. It is only followed during the last three months of pregnancy. It includes roast and boiled meats, without sauces, fish, green vegetables, salads, cheese, butter, and bread in small quantity. As beverages about 300 grammes of light wine are allowed, but no water. Soups, potatoes, farinaceous foods, and beer are proscribed, and sugar is replaced by saccharin.

This dietary was tried by Prochownik in three cases of women who had been obliged to resort to premature delivery, and it gave complete success—that is to say, the children which were delivered at term were slender and graceful, and their ulterior development proceeded normally.

The physician alluded to has tried this method during the last two years, and asserts that the passage of the strait is always accomplished more easily than in ordinary conditions. The method is applicable in three classes of cases: First, in those of narrow pelvis, in which this defect is not inordinately accentuated; if this be so, premature delivery is the only resource. Secondly, in cases in which the dystocia has previously been due to the excessive dimensions of the fetus. Thirdly, in cases of primiparæ over thirty years of age.

The regimen is one which it is averred can be tried without danger to the mother, and the ulterior development of the child goes on normally and without prejudice.

On Feeding in Gastric Ulcer.—Lauder Brunton (*British Med. Journal*, March 2, 1902; *Charlotte Med. Jour.*) says that a gastric ulcer must not be irritated by anything that will do harm to it, either mechanically or chemically. Amongst the things that injure mechanically are hard indigestible things that really play the part of sandpaper. For example, seeds may be considered absolutely indigestible. Fish bones may sometimes give rise to great pain and danger. Cellulose, which is found in various vegetables, such as cabbage, and in the form of fruit skins, is quite indigestible in the stomach. Strings are found in meat, and it is upon the less or greater size of the strings of meat that their digestibility or indigestibility depends. Anything hard, that is likely to plug the pylorus, tends to increase the acidity of the stomach, which in cases of gastric ulcer is generally over the normal, while it should rather be diminished. Chicken, then, is better than mutton, and mutton better than beef in this respect. Milk sometimes comes under the head of stringy food. Lime water tends to prevent the stringing of milk, as does also the process of peptonizing it. Mastication will do much for these patients. In cases of gastric ulcer begin by giving the patient a rest in bed, with feeding by the rectum a few days, then careful feeding by the mouth while rectal feeding is continued. The first food given is generally a small quantity of milk, and a tablespoonful of milk with the same quantity of lime water every two hours. The quantity of milk may be gradually increased, while that of the lime water is diminished for a few days. Then custard may be tried, and pounded fish, followed by pounded chicken. Chocolate may also be given. When dealing with starchy foods, they must be made into a paste with cold water first, while hot water is added afterward. Stale bread is far more digestible than fresh bread.

Diet in Chronic Heart Affections.—Illoway (*Amer. Jour. of Med. Sciences*, March, 1902) shows that the stomach may exert an influence on the heart by the way of the vagus and mechanically by contiguity, and illustrates both of these actions by cases. The question of food, therefore, is of importance, and he says in regulating the diet for cardiopathics we must be guided by the well-established facts as to the nature of the various cardiac maladies and well-established facts of dietetics. In organic conditions the mechanical influences also must be prevented. He therefore formulates certain rules: 1. All bulky and flatulent foods must be excluded, only foods that are readily and easily digestible allowed and all foods so cooked that their digestion is thereby facilitated. 2. All meals shall be small so that the stomach is not taxed too much nor greatly distended. 3. The intervals between the meals must be so regulated that sufficient time is given the stomach to empty itself and to have an interval of rest before the next meal is taken Diet tables are laid down by the author according to these rules.

Cranberries.—The pure, fresh juice of raw cranberries, given freely, either undiluted or with an equal part of water, is recommended by Goriansky as an excellent means of relieving the thirst in fever, and moreover, is markedly antipyretic. In the thirst and vomiting peculiar to cholera it is even more effective. In fifty cases in which ice and narcotics failed to make the slightest impression, cranberry juice, in small but repeated doses, rapidly checked both vomiting and nausea.

Sterilized Grape Juice as Medicine.—The cost which the grape cure necessitates places it beyond the means of most people. E. Ivanhoff (*Sem. Méd.*, Feb. 5, 1902) replaces it with expressed grape juice, which can be taken about half an hour or an hour before breakfast in doses of from four to eight ounces, corresponding usually to two hundred or four hundred grams of grapes. The liquid must be preserved in bottles carefully corked and kept in a cold place. It must be warmed slightly before being taken in order to make its effects more active. As soon as the dose has been absorbed the patient should take a little walk or other exercise. The author has successfully treated in this manner a number of cases of chronic bronchitis, nephritis and intestinal atony. He-

also employs it with equal success as a general tonic for convalescents from typhoid fever and severe forms of grippe. In two cases of organic heart disease, in one of aneurism accompanied with renal congestion and edema of the lower extremities and abdomen, this grape juice proved especially useful by reason of its diuretic action. The author thinks that this juice can be advantageously substituted for the grape cure, not only because it is more convenient, but also because it is exempt from the ordinary objections to grapes, namely, irritation of the teeth and the mucous membrane of the mouth, and occasionally indigestion from fermentation after eating the fruit.

Bacteria in Digestion.—The results of experiments with chickens to determine the effect of intestinal bacteria upon the process of digestion are reported by Professor Schottelius in a recent number of the *Archiv für Hygiene* (*Lit. Dig.*). Chickens were kept in cages from which all bacteria were carefully excluded and were supplied with food equally free from bacteria. They ate ravenously and almost continually and evidently digested their food well, yet not only did they not fatten but they steadily decreased in weight and strength. Another series of experiments gave direct and positive proof that the presence of intestinal bacteria is necessary to nutrition. Chickens which had been hatched and raised in a sterilized environment, receiving only germ-free food, thrived for a week, and then began to decline in weight and strength. Then they were divided into two groups, one of which was fed on sterilized food, the other on food containing bacteria. All of the first group died in a few days, the others improved rapidly and soon were indistinguishable from chickens that had run free in the poultry-yard. Mme. Metchnikoff has obtained analogous results with tadpoles which, fed for a time with germ-free food, attained an average weight of 25 milligrams (0.4 grain) and an average length of 15.5 millimeters (0.62 inch), while other tadpoles, fed for the same period on ordinary food, had an average weight of 142 millimeters (2.2 grains) and an average length 26.5 millimeters (1.06 inches).

The Effect of Regents' Examinations Upon Nervous Children.—DeWitt C. Wilcox, M.D., calls attention (*Hom. Jour. of Pediatrics*, March; *Med. Rev. of Revs.*) to the effect of the regents' examinations in New York State upon nervous children. The article is an extremely valuable contribution at the present time, when the stress of advanced educational methods has placed such additional burdens upon our children in the public schools

He says that but few observing parents in New York State have failed to notice at the time of an approaching regents' examination symptoms of nervous apprehensive excitement, irritability, loss of appetite, or sleeplessness in those children who were preparing for such examination. After the regents' examination has occurred there can often be observed evidences of physical exhaustion, nervous exhilaration or depression, hysterical emotions, and in some cases, absolute collapse. Furthermore, the author believes that physicians are called to attend more children for actual illness immediately after the regents' examination than at any other time of the year, seasons of epidemic alone excepted. He considers that in nearly every nervous child the mental excitement and nerve tension of the examinations so exhaust the reserve forces, always slender in these children, that resistance to disease becomes lessened, leaving the child subject to almost any malady that is prevalent, whether catarrhal, cold, typhoid, scarlet fever, or anything else. These semi-yearly examinations occurring in the younger school life of sensitive children are, in the author's opinion, the main cause of nervous collapse exhibited in later life by college students, the hard study at college being merely the climax of the strain begun in earlier years. The author instances three little patients of his to illustrate these statements, and concludes with the following forcible paragraph:

We made a great step forward when athletics became a part of college education, but we have much to do yet amongst the small school children who are in the most plastic stage of physical and mental development, and who, if injured while at that tender age, rarely recover the lost stamina or physical vigor. . . . The one particular error which I am convinced this State is making toward its younger pupils—and I speak specifically of children between the ages of eleven and fifteen—is the subjection of such children to a twice yearly ordeal which is of questionable benefit mentally, and, to my mind, is one of the greatest factors in the production of nervous irritation and physical ailments to which the school child is subject.

Rapid Sugar Testing.—For qualitative testing, Haines' solution is so simple and trustworthy as to leave nothing to be desired. One dram of the solution is boiled in a test tube six to eight drops of urine are added, and the boiling continued. If a bright yellow or red precipitate is obtained, sugar is present. With slight practice, one to two minutes is sufficient to gain in this way decisive qualitative data.

A method of quantitative estimation devised by Mr. Carl Irenaeus, of Chicago, eliminates the tediousness of the standard methods, and gives rapid and accurate results. The only apparatus required is a graduated test tube and pipette, and a Bunsen burner or spirit lamp.

When the presence of sugar in the urine has been determined, fill the test tube to the 12 c.c. Mark with Purdy's solution, and the pipette to the zero mark with the urine to be tested. Heat the test solution to boiling, and add the urine drop by drop in the test tube, boiling for a few seconds after the addition of each drop, until the blue color has entirely disappeared, trying to decolorize with the smallest possible quantity of urine. If less than 0.2 c.c. of the urine is required to decolorize the test, the urine contains above 4 per cent. of sugar, and should be diluted with an equal volume of water, and the results obtained multiplied by two. The subjoined table gives all ratios of reduction from one-half of 1 per cent. up to 4 per cent., calculated to each quarter per cent., with corresponding grains per ounce.

Cubic cm. Urine.		Per cent. Sugar.		Grains per ounce.
.2	.4	4	2	19.2	9.6
.225	.5	3.75	1.75	18	8.4
.25	.6	3.5	1.5	16.8	7.2
.275	.7	3.25	1.25	15.6	5
.3	.8	3	1	14.4	4.8
.325	1.2	2.75	.75	13.2	3.6
.35	1.6	2.5	.5	12	2.4
.375		2.25		10.8	

An Effective Depilatory.—In view of the difficulties of shaving for the complete removal of hair from the field of operation, Dr. Charles Greene Cumston (*Boston Med. and Surg. Journal*) has for some time employed with great advantage a paste of calcium hydrosulphate, as recommended by Reybaud of Marseilles. Its preparation is as follows: Two parts of freshly slaked lime, from which all grit has been removed, are mixed with three parts of water. The resulting milk of lime is traversed by a current of sulphuretted hydrogen. The milk of lime becomes pasty, and from milky white the mass becomes a bluish green. The odor of sulphuretted hy-

drogen is not very pronounced. This product is not caustic in the slightest degree, and may be manipulated without any fear. It will not soil the hands unless they are moistened with a solution of some mercurial salt whose metal is precipitated by sulphuretted hydrogen. The paste must be put up in brown glass bottles and well corked, because calcium hydrosulphate is decomposed by both light and air, more especially the latter. The carbonic acid in the air liberates the sulphuretted hydrogen and transforms the paste into an inert carbonic compound.

The way of employing this paste is very simple. With a spatula or spoonhandle a thin layer is spread on the parts from which the hair is to be removed. If the hair is very long it may be clipped off with the scissors first, but this precaution is not necessary if one is careful to see that the paste is applied down to the skin. The paste is left on for five minutes and then with tepid water and a towel it is removed by gentle friction. The skin will be found to be free from any trace of hair and better shaven than by the cleverest barber. Dr. Cumston says that the paste is absolutely devoid of any irritating properties to the skin, is painless, and leaves no trace behind. The hair grows again perfectly, just as when it has been removed with the razor. In scalp wounds, in genito-urinary, rectal, and gynecic surgery it is much better than the razor, as a perfectly smooth skin results.

Sterilization of Sponges.—Those who have abandoned sponges in favor of gauze because sponge could not be boiled, yet who sigh for their old-time friend, will be delighted to learn (*Am. Jour., Surg. and Gyn.*) that Elsberg has perfected a method of securing perfect sterilization without boiling. He began his work by observing that sponge consists essentially of an albuminoid material called "spongein." This is perfectly precipitated from its solutions by a solution containing 2 per cent. of tannic acid and 1 per cent. of caustic potash. Hence, he argued it should be perfectly possible to sterilize sponges in such a solution without destroying their desirable qualities. On testing this in practice, the theory has been found correct. The solution can be used again and again, and after infected sponges have been treated in this way, bacteriological investigation shows them to have been rendered absolutely sterile. The method of proceedure is briefly as follows: The sponges are freed from calcareous matter by immersion for twenty-four hours in 8 per cent. muriatic acid solution, and then thoroughly washed in water. They are next boiled for fifteen minutes in a solution containing one part of potassium hydrate and two parts of tannic acid to one hundred parts of water. The sponges are then washed and squeezed in sterile water or in carbolic acid or corrosive-sublimate solution until the potassium hydrate and tannic acid solution has been removed. They are then preserved in a 3 to 5-per-cent. solution of carbolic acid.

Cotton Wool Sandwiches as a Protective Against Sharp Objects Swallowed.—At a recent meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, Mr. G. Jameson Johnston, according to the *British Medical Journal* for March 29 (*N. Y. Med. Jour.*), related the extraordinary case of a man who, while swimming, swallowed his metallic plate of false teeth. A slapping on the back, with the view of dislodging the errant teeth, led to dyspnea. On his arrival at the hospital, a probang was used and the denture passed on into the stomach, where it set up severe pains at the pyloric end, which continued for some days. Mr. Johnston then hit upon the expedient of feeding the patient with sandwiches, each containing a thin layer of cotton. A week after the man's admission, an aperient of licorice powder brought away the denture, encased in cotton. One gentleman expressed the fear that cotton so administered might induce obstruction. Well, so might the denture. But the cotton, as the events showed, might bring away the dangerous pointed plate in harmless form; and if it didn't, one laparotomy would do for both plate and cotton.

OBSCENE ADVERTISEMENTS.

We hear so much about societies organized to purify morals that it would seem to be well worthy of some one's concern to make efforts to squelch the parade of advertisements illustrated by portraits of maids and women who describe in vivid language their menstrual pains, discharges, and other equally disgusting symptoms for the public to learn about. Does not this open and shameless description of the wombs and sexual organs of women tend to create an injurious impression on the minds of those of both sexes who read them?

Of course, most people are merely disgusted and nauseated by the daily relation of leucorrhea, metrorrhagia, amenorrhea, etc., etc., ad nauseam.

Can the medical profession bring influence to bear to mitigate the nuisance?

No doubt these advertisements are most remunerative to the newspapers, no matter whether the public is nauseated, deceived, robbed and injured.

It is a pleasant thing to pick up morning papers on the off days, when the pictures of the deluded women who relate with such wonderful abandon their menstrual sufferings, are not in evidence. Would that they might be omitted altogether and forever in future. If municipal authorities could blue pencil such advertisements it would be a consummation devoutly to be wished for.

—Among the most popular novels of the present season is one entitled "The History of Sir Richard Calmady," by a daughter of the late Charles Kingsley—a lady presumably of the highest culture, and certainly of more than average intelligence. The hero of the story is described as having come into the world beautiful and perfect in body, with the exception of his lower limbs, which were crippled and monstrously deformed as the result of a maternal impression, his mother having listened at the door while his father, whose legs had been crushed by a fall from his horse, was undergoing amputation in the next room. The child, we are told, was born—"with his feet set right up where his knees should have been, thus dwarfing him by a fourth of his height"—*a few days* after the accident. Within those few days, therefore, a quadruple amputation must have taken place in utero, the legs have been disposed of in some inconceivable way, and the feet secured, by a thorough union of tissue, etc., in their unnatural position. Well, to borrow a remark of Mr. Squeers, "It only shows what Natur can do, sir. She's a rum un, is Natur!"

—He was sitting by her side at dinner, proudly congratulating himself upon being where he could look down upon the beautiful neck and arms. "I am being tortured," she said, as she moved uneasily. "I have been vaccinated, and it is just 'taking.'" "Why," he said, unguardedly, as he cast another glance at that handsome neck and those lovely arms, "where were you vaccinated?" "In Boston," she replied, as a smile drove away the evidences of pain.

MISCELLANY.

—"Never employ plaster-of-Paris bandages in the treatment of fractures of the limbs in children."

—Eupatorium, or the common boneset, the *Medical Summary* says, is a very excellent remedy in intractable hiccough, curing when all other remedies have failed.

—In the case of foreign bodies in the air passages, the voice is not altered if the body has entered the trachea, whereas it is very distinctly modified if it lies within the larynx.

—The *Indian Medical Gazette* announces that Dr. Rost has successfully cultivated the cancer germ and has infected a guinea-pig with his culture. This statement is important if true!

—In several islands in the Pacific, where almost every one who can afford it is tattooed, the reason given is that by doing so they have a much better chance for getting safely into the other world.

—In the island of Porto Rico a general vaccination (860,000) was completed on June 20, 1899. Since then, the island has recorded just 3 deaths from smallpox in two years. The average for ten years previous was 629.

—The medical laws of Australia, passed in 1901, admit to practice physicians who have taken a five-year course in medicine before taking a degree. This debars from practice there all graduates of American medical schools.

—It is stated that one-fifth of all the boys who apply for admission to the United States Naval Academy are rejected on account of irregularity of the heart's action, and this, the surgeons claim, is caused almost universally by smoking cigarettes.

—It is reported that Mr. J. Pierpont Morgan has given $60,000 for a deaconess home and hospital in connection with St. George's Church, New York. A convalescent hospital with a solarium will occupy the upper portion of the building.

—French physicians warn persons who allow birds to take sugar and other dainties from the lips. It has been discovered that trainers of young birds in Europe frequently contract in this way a peculiar disease of the throat and lungs that is frequently fatal.

—An ingenious chemist has estimated that the average human being is worth about $18,300 from the chemical standpoint. His calculations are based on the fact that the human body contains three pounds and thirteen ounces of calcium; and calcium, just now, is worth $300 an ounce.

—Dawbarn considers surgical needles are best kept in a saturated watery solution of washing soda. They do not then tarnish or become dull. Needles will keep well in absolute alcohol containing either calcium chloride or a slip of gelatin, but the washing soda is least expensive and quite reliable.

—At an anti-vaccination meeting held recently in Bournemouth, England, one of the speakers reported a case in which vaccination had affected the brain. A gentleman had ordered all his servants to be vaccinated, and the gardener's insanity after vaccination took the form of an abnormal craving for work.

—Cesarian section has been performed by Dr. N. Charles of Liége for the fourth time on a small rachitic patient, whose pelvis has suprapubic diameter of only 6 cm. Both mother and child are reported as doing well. Of the three children previously delivered in the same manner two are well and one died at the age of thirteen months from bronchitis.

—The *Muenchener med. Wochenschrift* which is owned and published by a board of 11 prominent medical men last year declared a dividend of 4,400 marks, which was distributed among various medical aid associations. This year there was surplus of 9,300 marks, of which 5,000 marks were given to the Pettenkoffer Memorial Building Fund, and the remainder to societies for the relief of the widows and orphans of medical men.

—The experiments made secretly upon four men and two women volunteers in Paris to test Berthelot's theories regarding the value of chemic foods are reported successful thus far. The subjects of experiment have eaten nothing for three weeks except various combinations of carbon, hydrogen and nitrogen in the form of pellets, without distress or impairment of health. Three have lost flesh, the weight of two has remained stationary and one is growing fleshy.

—Professor Zimmer, of Berlin, has been investigating the causes of insanity among women, and has come to the conclusion that if women are admitted into competition with men the inevitable result will be a tremendous increase of insanity among the women. He finds that the percentage of women teachers who become insane is almost double that of the men teachers. Inquiries were also made about women employed as telegraphers, sales clerks, and in the telephone service, and, furthermore, with regard to women engaged in the Swiss watchmaking trade. These inquiries showed that in the occupations mentioned a far larger proportion of women than men succumb to mental disorders.

—To prevent the procreation of degenerates under the laws of heredity, it is now suggested by the extremists that resort be had to the modified operation of resecting the spermatic cord. Dr. Ochsner, of Chicago, speaking of the operation, which he has twice done for disease of the prostate, says: "Judging by the results obtained in two cases reported, it is evidently possible to obtain sterility without in any way interfering with the possibility of future enjoyment. In other words, this operation is one which does not mutilate the person, does not destroy the sexual power, but does prevent the power of propagation. Another writer has just announced his experience in forty-two cases of defectives, and is prepared to state positively that this operation "does not impair the sexual power of those operated upon, that they improve mentally and physically, that they increase in flesh, feel that they are stronger, and that while prior to the operation they made no advance in school, their advance is now fairly satisfactory."

The operation itself is a simple one: Cocainize the site of operation over the external inguinal ring, make a one-inch incision, clear the cord and ligate at the nearest point to the seminal vesicle, and remove about one-fourth inch of the vas; close with a buried stitch.

"By this simple method" remarks a contemporary, "is the world to be ultimately reformed—ridded of the picturesque highwayman, the avaricious bankwrecker, as well as of the idiot, the imbecile, and the epileptic. It would doubtless be just as well fitted for preventing the gouty, the tubercular, or diabetic inheritances; and when it comes to be practised by advanced female practitioners, it will easily outrival in usefulness ovariotomy for the creation of neuters. It is possible that in Fifth avenue circles, where maternity is reckoned an inconvenience which precludes from the full enjoyment of pink teas and ping-pong parties, no man will be eligible for the social distinction of matrimony unless he has previously submitted himself to this harmless surgical operation."

ORIGINAL ARTICLES.

RESUME OF THE MORE RECENT ADVANCES IN URETHRAL PATHOLOGY AND THERAPEUTICS.

BY G. FRANK LYDSTON, M.D., CHICAGO, ILL.

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THE principal recent advance in urethral pathology has been the establishment of the relation of deep-seated and excessive chronic infection of the glandular tissue and adnexa of the prostate to chronic urethral disease. While a more thorough knowledge of prostatic infection and its results has led to a somewhat pessimistic view, in general, of the curability of chronic deep-seated gonorrheal infection, it has, nevertheless, greatly increased the usefulness of the surgeon in this field. We are now fairly conversant with the unfortunate pathologic fact that chronic urethral discharge and recurrent infection in the male, to say nothing of the various forms of infection conveyed to innocent women, are often due to deep-seated prostatic disease of long-standing, with or without associated infection of the vesiculæ seminales. With increasing knowledge of the pathology of deep-seated gonorrheal infection, we have come to understand, first, the incurability of the majority of such cases, from a pathologic standpoint, however good the clinical result may seem to be; second, the necessity of persistent antiseptic—*i. e.*, microbicidal—treatment of such conditions, associated with the mechanical expression of the diseased secretions and a modification of the perverted circulation of the part by prostatic massage.

In a general way, the treatment of chronic posterior urethritis of gonorrheal origin involves also the treatment of chronic gonorrheal prostatitis, as they are almost invariably associated. It is here that the comparatively new treatment by massage of the prostate comes into play. In comparatively few cases of deep-seated infection is it possible for the surgeon to do the case full justice without thorough and systematic massage, continued for a prolonged period. By massage we accomplish, as already suggested, the expression of the germ-laden pathologic secretions of the affected glandular tissue, and an improvement in its circulation. Not only is the circulation temporarily stimulated and permanently improved, but the massage has a distinctly deobstruent effect upon the affected tissues, inducing absorption of the inflammatory exudate, which is always present and enters into the *ensemble* of pathologic conditions found in prostatic and periprostatic hyperplasia. Irritability of the prostate and vesical neck is distinctly relieved by massage. This is brought about in two ways: (1) Through the improvement in the circulation and the removal of the exudate which produces irritation of the delicate nerves of the part; (2) by directly blunting the sensitiveness of the nerve supply, thus relieving hyperesthesia and assisting in restoring the sensibility to its normal status.

The general effects of prostatic irritation, especially in those cases in which hyperplasic or inflammatory tissue is exerting constant pressure upon the sympathetic and sensory nerve supply, are much more marked than is ordinarily supposed. Neurasthenia of the ordinary type, and sexual neurasthenia, with its manifold symptomatology, embracing digestive disturbances, bowel inactivity, melancholia, hypochondriasis, and that seldom recognized but frequent condition, male hysteria, are among the results of chronic prostatic disease which are frequently relievable by proper and systematic massage.

In a general way, the author does not hesitate to assert his belief that massage of the prostate, properly performed, is one of the most valuable advances in genito-urinary therapeutics that has been developed for many years. The author takes the liberty of saying at this juncture that prostatic massage is not to be considered a cure-all. On the other hand, it should always be given a fair chance. Many individuals labor under the fatuous notion that they are administering massage of the prostate when, as a matter of fact, the treatment which they are giving is as far removed from scientific prostatic massage as could well be imagined. The surgeon with the short, stubby finger would better dispense with the treatment altogether, rather than to bring it into discredit through failures in cases in which, were massage properly performed, excellent results would be obtained. In many instances the physician undertakes massage of the prostate without in the least crystallizing in his mind the anatomic points necessary to the intelligent employment of the treatment. The author has met with numerous cases in which so-called prostatic massage consisted in rubbing the perineum. Comment upon this is unnecessary.

In the performance of massage of the prostate various authorities recommend different methods and positions. The author will make no comment upon the methods employed by others, but will simply state that in his experience the latero-prone position, with the buttocks upon the edge of the table so as to be easily accessible to the operator, and the knees well drawn up toward the chest, is most satisfactory. It is as difficult to instruct the inexperienced in the technique of prostatic massage as it is to describe the sound of a violin. Much depends upon the tactile sensibility and education of the finger. In a general way, prostatic massage requires that not only the prostate proper, but the periprostatic tissue should be stroked and rubbed with the pulp of the finger towards the median line, and forward toward the operator. The seminal vesicles, prostate and periprostatic tissue at the neck of the bladder represent an equilateral triangle, the apex of which corresponds to the apex of the prostate, and the base to a line drawn between the upper extremities of the seminal vesicles. The massage should be applied obliquely toward the median line and apex of the prostate. As a rule, all of the tissues within this triangular area should be thoroughly massaged. The amount of pressure depends upon the tolerance of the patient, the sensibility of the prostate, and the chronicity of the inflammation. It should be gentle at first, and gradually increased *pari passu* with the increase in the tolerance of the patient.

The frequency with which massage should be administered necessarily depends upon circumstances. Some patients tolerate the operation daily with manifest advantage. Comparatively few, however, tolerate it oftener than every other day, and in by far the majority of cases twice weekly is best. The massage may be combined with through and through irrigations of various antiseptic solutions, of which the permanganate of potassium, nitrate of silver, albargin and sulphate of copper are the most useful.

The last few years have been signalized by the introduction of a class of remedies for gonorrheal infection which constitute a distinct advance over all those hitherto employed. The colloidal salts of silver have admirably stood the test of time and experience in the treat-

ment of gonorrhea. The most useful of these salts are argonin, protargol, albargin and nargol. The majority of genito-urinary authorities claim preëminence for protargol. Many practitioners use it to the exclusion of all the other silver salts. Without discussing in detail the merits and demerits of the various preparations of silver, the author will briefly present the conclusions which he has drawn from their rather extensive use. The new salts of silver, like the nitrate of silver, are distinctly gonococcidal in their action. So marked is their destructive influence upon the gonococcus that, were it anatomically possible to reach by any known method of application every portion of the area infected, it would be possible to cure by a single application of a solution of any of these salts, in moderate strength, any given case of gonorrhea.

The order of the usefulness of the silver salts, so far as the author's own experience goes, corresponds to the order in which they have been enumerated above. Argonin is the most serviceable, the difference, however, between argonin and protargol being not very marked, on the average. Albargin has proved a very valuable addition to the therapy of gonorrhea. It is more irritating, however, than the other salts, but, if used in mild solutions, is especially advantageous in the declining stages of urethritis, and for irrigation in chronic infections, particularly of the prostate and bladder. In simple urethritis—*i. e.*, urethritis of non-specific origin, of a subacute or chronic character, it is very valuable. It may be used in the strength of from ¼ of 1 per cent. to 2 per cent. When used by irrigation, it must be remembered that, like the nitrate of silver, it is proportionately much more irritating when copious quantities of a very mild solution are used than when small quantities of much stronger solutions are used. Mild irrigation is often productive of much more irritation than the injection of quite strong solutions by the ordinary deep urethral syringe. Argonin and protargol should be used in a strength of ½ of 1 per cent. at the beginning of treatment, being gradually increased in strength thereafter. It is rarely necessary to increase the strength beyond 2½ or 3 per cent.; indeed, comparatively few patients tolerate a strength of more than 4 per cent. As the gonococci begin to disappear from the discharge, an astringent, such as the muriate of hydrastin, may be added to the solution of the silver salt. Nargol is rather less irritating than the other silver salts, but so far as the author's experience goes, not so universally useful. Increasing experience, however, may modify this opinion.

A distinct advance in the management of urethral disease and the prostatic and vesical complications or conditions secondary to urethral disease, has been the introduction of the irrigation method, or, rather, its general recognition. This qualification is only just, for the reason that the author was using through and through irrigations of permanganate of potassium in deep-seated gonorrheal infection more than twenty years ago. So far as he is aware, the first contribution which appeared in this country on the treatment of deep-seated urethral and bladder disease by means of copious irrigations, without the use of tube or catheter, relying entirely upon hydrostatic pressure, was written by the author, and published some years ago in the *Journal of Cutaneous and Venereal Diseases.* Credit for the method has, within the last few years, been given to Janet—where it has not been deliberately appropriated without credit. Reverdin, however, in Europe, antedated Janet in the use of this method. The credit for its general use in America belongs to Valentine.

As has been said of the silver salts, copious irrigation with permanganate of potassium solution is so nearly a specific for gonorrhea that a single treatment would suffice for the cure of the disease in uncomplicated cases were it not anatomically impossible to treat all the affected tissues, and bring the antiseptic solution in contact with each individual germ. Permanganate of potassium is the most generally useful of all the drugs that have been used for irrigation of the urethra, prostate and bladder in gonorrheal infection. The colloidal silver salts, however, are of great value, and were it not for the important consideration of their costliness, as compared with the permanganate, they would be more extensively employed than they are. Permanganate of potassium should be used at the beginning of treatment in moderate strength, much being dependent upon the stage of infection and the tolerance of the urethra. A strength of 1:10,000 to 1:7,000 is usually sufficient at the outset, the strength being gradually increased until as high as 1:1,000 is reached in some cases. If the method be used at all, it should be used systematically and frequently. It is applicable only in chronic and subacute cases. It is especially valuable in incipient gonorrhea, in which the disease can hardly be said to have fairly begun. It is often advisable to begin by a thorough irrigation, twice daily, this being employed for a week, at the end of which time a single daily irrigation is given. The treatment should be kept up for at least three weeks, in recent cases. In many cases treatment must be continued much longer. In chronic cases either the permanganate or some other gonococcidal drug must be employed until the germs have entirely disappeared.

The recurrent catheter or tube is now seldom used for irrigation. A short nozzle of some kind is indicated. The author has found a simple hard rubber nozzle, of his own designing, to be the most generally useful for the purpose. The Valentine apparatus is excellent, however. Care should be taken not to have the hydrostatic pressure too great. Two things should be avoided: (1) The entrance of fluid into the deep urethra in cases in which these parts are not already infected; (2) trauma of the urethra produced by the pressure of the entering fluid.

In very acute and virulent cases, the irrigation method should not be employed until such time as the inflammation has in great measure subsided. Very serious results sometimes accrue from neglect of this precaution. In chronic cases involving the deep urethra, prostate and bladder, through and through irrigation is required. The antiseptic solution is forced into the bladder by simple hydrostatic pressure, to be expelled thereafter by voluntary micturition. Care should be taken to irrigate the anterior urethra thoroughly before allowing the fluid to enter the deeper portion of the canal, lest more severe deep-seated infection occur than that which already exists. A liberal quantity of fluid should be used —from a quart to two quarts. This should be given moderately warm. It should be remembered that very hot solutions may destroy the epithelium of the mucous membrane of the genito-urinary tract without producing the least discomfort to the patient. The patient's sensations, therefore, are no criterion for the guidance of the operator.

After the anterior urethra has been thoroughly irrigated by the ingress and egress of the major part of the antiseptic solution, the bladder should be filled from two to four times, and the patient instructed to expel the fluid, as in micturition. Care should be taken not to over-distend the bladder, for it is quite easy to traumatize it by hydrostatic pressure.

A method of treatment for chronic urethral disease which has recently become quite popular in certain quarters is that of Oberlaender. This consists in systematic dilations of the urethra by means of dilators or "expanders," constructed especially for the purpose. These are of two varieties, adapted to the anterior and posterior urethra respectively. These systematic dilations are combined with through and through irrigations with antiseptic solutions, permanganate of potassium having the preference. The method is of distinct value, where the patient is able and willing to submit to its systematic employment. Like most therapeutic innovations, too much has been claimed for it by its overzealous advocates. Discounting this, however, many cases which have proved resistent to other measures of treatment are unquestionably amenable to it.

Increasing experience in urethroscopy has only served to demonstrate the value of accurate localization in the diagnosis and treatment of urethral disease. The time has passed when it is either scientific or practical to go on indefinitely treating chronic urethral disease without careful investigation to determine the fundamental pathologic conditions present. Not infrequently the ordinary means of treatment have been persisted in for months, or perhaps years, without avail, in cases in which urethroscopy has readily determined the exsitence of an extremely limited area of disease, the treatment of which has resulted in the cure of a chronic discharge of long-standing.

The author's personal experience has confirmed him in the view, expressed many years ago, that, in order to do successful urethroscopic work, it is necessary to use tubes of rather large caliber. The use of small tubes tor the exploration and treatment of wide-calibered urethras seems the height of absurdity. The profession of Europe—the fountain-head of urethroscopy—seems wofully behind that of America in this essential. As time goes on, the importance of the teachings of Fessenden Otis, in regard to the relation of the caliber of the urethra to disease of its mucous membrane, seems more and more logical and practical. In cases in which the urethra does not admit urethroscopic tubes of some size, pathologic obstructive conditions necessarily exist, which demand removal, independently of any possible revelation that may be made by urethroscopy. Once the coarctations of the urethra have been removed, the necessity of urethroscopic diagnosis and treatment oftimes no longer exists.

There has been something of a reaction on the part of the profession against the operation of internal urethrotomy in recent years. This reaction has been, to a certain degree, ill-timed and based upon false premises. It has been supposed—nay, claimed—in certain quarters that the introduction of the Oberlaender method, combined with through and through antiseptic irrigation, has done away with the necessity of internal urethrotomy. To this view the author respectfully demurs. It is undoubtedly true that a more systematic use of dilations, combined with suitable irrigation, than has hitherto prevailed, will somewhat restrict the number of strictures developing from gonorrhea. That the method is much, if any, more efficacious in the management of stricture, once that condition has developed, than the ordinary methods of dilatation, combined with antiseptic irrigation, seems to the author's mind very doubtful. So far as resilent and irritable stricture are concerned, the Oberlaender method of treatment is oftimes deleterious rather than otherwise, and the patient is eventually compelled to submit to operation.

A CONTRIBUTION TO THE STUDY OF HERPES PROGENITALIS.

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PART II.—TREATMENT.

THE treatment should be directed towards the removal of those causative factors, favoring the occurrence of herpes progenitalis. In a great number of cases, can an attack of herpes be early subjugated or aborted, if not entirely prevented. Our efforts should, therefore, consist in the detection of the causes instrumental in the production of the subject under consideration and their immediate eradication. We should invariably attempt to barricade all avenues to the future entrance of the foe—so to speak.

Of course in cases of an hereditary neurotic predisposition, or in the so-called "darthic diathesis," but little if anything can be accomplished in the establishment of a permanent cure, for, notwithstanding our utmost endeavors, the malady will exhibit a marked obstinacy, and in spite of all our therapeusis shows persistency and a tendency to recur.

If the malady be due to a depraved condition of the blood, hematinics, notably the compounds of iron, arsenic, and manganese, may be tried.

The amount of carbohydrates should be restricted, as they tend to produce flatulency and besides tax bodily oxygenesis, thus calling into play an increased expenditure of neural force. Indigestion should be avoided as much as possible and only easily digestible, nutritious and wholesome food be allowed. Pickled articles of food and various condiments must be interdicted, as well as dishes of the crustaceans. In no way shall the patient partake of such substances as are apt to create autotoxemia, by virtue of their decomposition within the primavia, and the formation of ptomains and leucomains.

In deranged conditions of the alimentary tract, some of the simple bitters are very valuable and may be profitably combined with some preparation of cascara. Malt liquors and spiritual beverages, as well as tea and coffee, are not well borne in those cases, as they invariably excite the neural element.

If herpes be due to the cumulative action of some of the metallic salts, their administration should be immediately discontinued and not resumed until all traces of their existence are obliterated.

Senile degeneration requires a tonic course of medication, the judicious use of phosphorus, arsenic, and strychnine.

If herpes is the result of acquired functional neuroses or psychoses, or actual pathologic states of the nervous system, we are oftentimes forced to resort to the exhibition of some of the analgesics, sedatives and nervines, as codein, cannabis indica, hyoscyamus, camphor, valerian, the salts of zinc (preëminently the phosphide), and tentatively the bromides.

We often encounter cases of progenital herpes, which are undoubtedly the concomitant of uricemia; under these circumstances we must utilize the salts of lithium (preferably the citrate and benzoate), potassium and sodium, in conjunction with colchicum. If the lesions are but an indication of the lactic acid diathesis, we must needs direct our attention to the salicylates, iodides, and the pure oil of betula lenta.

Not infrequently, do we meet herpes progenitalis in the later period of the secondary stage of syphilis, in individuals who have never been subject to an attack of herpes before, as it will be shown in the appended report of cases.

The writer is not prepared to state at this particular time in what relation these two affections stand to each other. Tuberculosis may likewise induce recurrent attacks of herpes, if reliance be placed upon report of cases in the practice of some French observers. Under those circumstances we will do well to put the patient on specific medication and adopt the usual treatment recommended for tuberculosis.

The treatment for herpes progenitalis originating from local causes, depends chiefly upon the particular factor exciting an occurrence. Thus, in cases of herpes consequent to the decomposition of smegma, cleanliness is the main remedy to be relied on. When the prepuce is too elongated or tight, circumcision will obviate the trouble and serve as a valuable prophylactic to future herpetic manifestations. Discharges of any kind emanating from some portion of the genital tract must be checked, before the herpes can eventually be made to yield.

To whatever local condition we may ascribe the existence of progenital herpes, and in whatever manner the dermatosis be brought about constitutionally, the indications for treatment may be summed up as follows:

(1) Remove the cause and treat any systemic disorder acting as an exciting or predisposing factor.

(2) Observe strict cleanliness of the parts involved.

(3) Use protectives to exclude any irritation or infection of the lesions.

(4) If the latter has occurred in spite of our efforts at prevention, treat the resulting ulcer antiseptically with the various agents at our command.

The first of these measures has received ample consideration in a preceding page. The second can be easily secured by daily ablutions of warm water, to which a small amount of boric acid or sodium biborate has been added, after which the area may be dried with a pledget of absorbent cotton and one of the following protective powders or solutions applied:

℞ Bismuthi subnitr.,
Acidi boracici ..... aa ʒiij
Aristolis ..... ʒii
M. Et fiat pulv.

or

℞ Zinc. oxidi.
Bismuthi subnitr. ..... aa ʒiii
Pulv. acaciæ.
Europhen ..... aa ʒii
M. Et fiat pulv.

Prior to the application of the above formulæ, it is advisable to moisten the regions with a little glycerin in order that the powder should properly adhere to them.

Chemically pure talcum or the palmitate and stearate of calcium and magnesium, to which 10 per cent. of ichthyol or balsam Peru has been added, will admirably serve the purpose.

In case where the lesions are situated on the glans or prepuce, they should be protected from friction, pressure or irritating secretions by separating these two structures by means of a piece of sterile gauze, containing a slit in the center, through which the glans penis is passed and the prepuce drawn over it. When the vesicles are located in the space between the scrotum and thigh, they should be covered by borated gauze and a loose bandage applied.

Should this, for obvious reasons, be inexpedient or impossible, then the areas may be protected by painting them with flexible collodion containing any of the above enumerated combinations in solution or suspension. After evaporation of the ether, a pellicle is left behind which sufficiently protects the parts, besides enabling the incorporated remedial agents to exercise their medicinal effects.

Where the lesions have ruptured either through friction or spontaneously and have become infected, we must endeavor to keep them scrupulously clean and free from all accumulating discharges, by washing them with some mild antiseptic solution, as boric acid, lysol, etc.; following this any of the above-mentioned preparations may appropriately be applied. At no time should we attempt to cauterize these ulcers or use any strong antiseptic or irritant, unless they be contaminated by concomitant chancroidal pus, and even then with a great deal of care and circumspection.

Strong applications should be avoided lest the patches asume an angry and eczematous character and the result be worse than the original lesion.

When thus treated, the vesicles soon dessicate and become covered with an insignificant crust, under which epithelial regeneration takes place, which ultimately falls off, exposing a pink area which soon fades to the color of normal skin.

The entire cycle is completed in ten days.

In conclusion, the author wishes to annex a report of cases which may serve as an adequate illustration of the topic heretofore discussed.

Case I.—M. W., aet. 35, mulatto, waiter, married, presented himself for treatment with the following history:

Family history: Father died of phthisis pulmonalis.

Previous history: Negative.

He has always been of slim stature, weighing not more than 110 pounds, and of delicate health.

St. Pr.—Contracted a meatal chancre a year ago, which was soon followed by the secondary symptoms of syphilis. He has received appropriate treatment with rapid disappearance of all symptoms, and his general health has remarkably improved. Since the first manifestation of the syphilides, he has repeatedly noticed scattered vesicles on the integument of the penis; they remained stationary for about three or four days, after which time they dried up, became covered with scabs, and ultimately disappeared. He always experienced a burning sensation and some pruritus at the site of the lesions. The present eruption is his fourth attack.

Examination revealed the presence of two groups of herpetic vesicles, situated on the integument of the prepuce, unbroken and extremely sensitive to the touch.

Treatment.—This consisted in the administration of the syrup of hydroiodic acid inconjunction with the hypophosphites and zinc phosphide, together with the topical application of a dusting powder, composed of equal parts of boric acid, bismuth subnitrate and aristol. He was directed to moisten the areas with some glycerin prior to the application of the powder. Under this regimé the vesicles soon vanished. He was advised to continue the internal medication for at least four or five weeks. Four months have elapsed since this last attack, during which time he has been unmolested by any recurrences.

Case II.—M. S., aet. 24, American, clerk, unmarried.

Family history: Reveals a neurotic tendency.

Past history: Negative, except for some of the exanthemata during early childhood and for recurring attacks of the present malady.

St. Pr.—Almost invariably after cohabitation he no-

tices several groups of vesicles, situated either on the integument or mucosa of the prepuce, or upon the glans. There is some smarting sensation accompanying the eruption of the lesions. The period of incubation is indefinite and varies with each individual atack, at an average from two to six days. The lesions, when mature, occasion considerable discomfort. They make their departure within about ten days from the date of onset. The prepuce is somewhat elongated, although not constricted, being freely movable; the preputial subcus is filled with smegma. Few groups of herpetic vesicles are visible on the glans penis, near the corona.

Treatment.—He was advised to cleanse the prepuce and glans scrupulously with hot water (to which some boric acid is added) after coitus, and dust on a powder composed of boracic acid, zinc oxid and europhen, subsequently. Valerianate of zinc in conjunction with cannabin and strychnin phosphate was prescribed as a prophylactic. He was told to report at the next recurrence of the vesicles.

Later.—Several months have elapsed since, and, notwithstanding repeated cohabitation, he enjoys permanent freedom from the herpetic lesions.

Case III.—M. McC., aet. 28, white, Irish, laborer, married.

Family history: Negative.

Past history: Patient states that he has had ulcers on the glans penis, which responded to local treatment.

St. Pr.—This is his third attack. Herpetic vesicles are situated in the sulcus glandis; there are three groups of them. The prepuce is very tight, movable only with considerable difficulty, and the preputial cavity contains a quantity of foul-smelling and decomposed smegma.

Treatment.—Circumcision was performed, and the author has reason to believe that the possibility of recurrences may be excluded.

Case IV.—Geo. W., aet. 27, white, American, jockey.

Family history: Negative.

Past history: Has had pneumonia during childhood; gonorrhea about one year ago.

St. Pr.—Period of incubation in this case was about ten days. He has experienced considerable pain and itching prior to the appearance of the lesions. Examination revealed about seven or eight groups of vesicles, irregularly distributed over the glans, prepuce and integument of the penis. There is some glandular hyperplasia in the right inguinal region. Pruritus is marked, especially during the night.

Treatment.—He was told to bathe the genitalia in warm water twice daily and then apply a drying powder, composed of equal parts of boric acid, bismuth subnitrate and zinc oxid. This is a recent case, and the writer was unable to gather supplementary information relative to any recurrence of this malady.

SKIN DISEASES IN CHILDREN.

BY M. E. FITCH, M.D., PHILADELPHIA.

THE general practitioner is the man, as a rule, who catches the cases of skin trouble in children, and frequently it becomes a matter of great doubt to him whether his diagnosis is the correct one, for on such a diagnosis may depend his professional success in the community, for it is in the children of a place that a majority of the people are interested.

It is a matter of great importance as to the cause for the appearance of papules, pustules or vesicles. It may be chicken-pox, smallpox, measles or hereditary syphilis. Stop for one moment and think of the importance of any one of these diagnoses.

In the first place, taking up the question of hereditary syphilis, we will take up the question of the diagnosis. Imagine, as a typical case, that we have a baby about four or five months old. The mother is a healthy-looking woman who nurses her own child. There is no history of previous deaths of children in the family. The child at birth was not especially well nourished and had a general efflorescence over it and also that condition called by old nurses "snuffles." There is a denial of the existence of any venereal disease in either parent. The child, under treatment, improves in appearance until it looks quite healthy, but, curiously enough, in this case the child developed a lesion which showed undoubtedly that the case was syphilitic in its origin, for the phalanx of one of its fingers became swollen, reddened and showed a tendency to break down. This is the so-called dactelitis syphilitica, which closely resembles the same form of disease due to tubercular trouble so that frequently it is difficult to distinguish the one from the other. It is well to remember that when a child is born with a general pustular efflorescence the condition is usually unmanageable, resulting fatally. If the efflorescence comes later and is maculous and papulous rather than a deeper lesion of the skin, the prognosis is better. These children do far better on good breast milk than on artificial food and they should do well if carefully treated.

In another case there was an appearance of papules a week after the child's birth with pustules appearing on the palms of the hands and the soles of the feet. It had a muco-purulent discharge from the nose and crustations formed over the eyebrows. The temperature was always normal and the gastro-intestinal condition seemed to be fair. Both children were troubled a great deal with insomnia and restlessness which are marked symptoms of hereditary syphilis. One thing must be remembered with regard to these children, that the mother is apt to be frightened by the eruption and therefore her milk may be lessened or not of good quality for the time being. Under these circumstances it is better to assure the mother that the milk will return and in the meantime get some well-known milk mixture.

Of course, a history of miscarriages frequently points to syphilis as a cause, especially when there has been coupled with this a doubtful lesion in the child, but frequently there is no history of miscarriages at all.

The treatment, of course, is the administration of mercury to the child. Here, we can not, of course, go by the guide of salivation which does not occur readily in children, but by the condition of the bowels. If too much mercury is administered these discharges will become loose and frequent, showing that the dose should be decreased. It is well first to wash the child thoroughly in warm water and soap and then spread upon the child a piece of flannel wide enough to extend from the ensiform cartilage to the pubes and long enough to go around the body, upon which is spread an ointment consisting of oleate of mercury diluted 50 per cent with some bland ointment such as rose water. This should be allowed to stay for a couple of days, after which the skin should be wiped and fresh flannel placed on it. If, under this treatment the skin does not become irritable, the ointment can be increased up to its full strength, which is an officinal 20 per cent. In addition to this external treatment the giving of mercury with chalk is indicated in the form of hydrargyrum cum creta in doses of from ½ to 2 grs.

Of course, cases of syphilis in children may be much more marked, for example, children may develop gummata and this may go on until the physical condition

of the child becomes very much deteriorated. Rotch describes a case in which an infant 4 months old was brought under his notice with snuffles and a grave type of gumma and efflorescence covering its entire body. In addition he noticed that the left arm hung helpless at its side and also the left leg. He found a smooth, hard, painful swelling at the lower end of the humerus. He did not see the child for several weeks, and finally the mother came back very indignant, stating that she had been to a surgeon and he had told her that the child was suffering from a broken arm and the swelling was the callus. The mercury was stopped, a splint ordered and Rotch says that it was unnecessary to state that the arm and infant had grown rapidly worse. On the advice of Rotch the splint was removed, a vigorous course of mercury given and the child improved very much. This lesion undoubtedly was osteo-chondritis.

Many authorities deny the fact that a syphilitic child can be borne by a non-syphilitic mother, but undoubtedly there are cases from time to time in which it is impossible to detect any syphilis in the mother and yet the children are undoubtedly syphilitic. Again, the mother can nurse the child without becoming infected. It is probably true that the mother in some way has immunity or else the disease in her is so trifling that its existence can not be detected.

Infantile eczema is a condition which is moderately common and often extremely stubborn to treat. Under the age of two years it occurs frequently in children. As a rule the children are well and rosy but they develop rashes on the cheeks and in the groins. On examination we find this rash is a reddened area partly squamous, partly papulous and partly erythematous. The subcutaneous tissue is thickened and the existence of scratching shows considerable irritation but there is no efflorescence to be seen in other parts of the body and nothing else abnormal exists.

In the treatment look for rheumatic family histories, especially in children who look very healthy. Gout, too, is generally manifested as eczema in children. Heat, cold dry air and the use of hard water or certain soaps may be the cause. The treatment depends entirely on this diagnosis. If there is deficient elimination from bowel or kidney, or digestive disturbances, find it out. Often the excessive use of farinaceous foods may be the cause of breast milk with a heavy percentage of fat.

Another case which bobs up from time to time is that of erythema multiforma. A typical case of this sort is as follows: A child comes of healthy parentage, with no history of disease in the family. The child is well until it is probably six or nine months old when it seems to suffer from frontal headache and feverishness at night. The appetite grows poor and it loses weight. With this there is no cough, no insomnia and nothing unusual noted in the urine. As a rule the child is anemic, irritable and the bowels are constipated. As the child grows older there appears an efflorescence attended with much itching on the face, body and legs but the soles of the feet and palms of the hands are not affected.

This eruption consists of maculi which vary in size and change from day to day, being irregular in distribution and pinkish in color. On examination of the child we find the lungs and heart are normal and there is no appearnce of any infectious disease. If we draw the finger over these eruptions we find the pinkish color disappears quickly, showing that these spots are caused by congestion of the blood vessels which supply the skin. It is not a purpura which would result from rupture of these vessels but purely an erythematous condition. There are no evidences of hemorrhages, there is no pain, no fever, no swelling or induration. The existence of irritation and the changeable character of the spots show that it is not syphilitic, while the distribution and appearance of the efflorescence show that it is not eczema. It is well to remember that this erythema can be produced by certain drugs and certain articles of food. Belladonna will produce it and such articles of food as strawberries, crabs, etc. There is probably a connection between the delicate fibers of the nerves of the stomach and the skin. A very common cause of this disturbance in children is tea. Children who are apt to be tea drinkers show a variety of disturbances, among them, indigestion. From this by reflex action on the central nervous system this condition is produced on a delicate skin. The use of iron is excellent in these cases, especially some form which is not constipating. In addition to this, if the child stops taking tea, pastry, candy, etc., and confines itself more to milk, soups and stale bread, combined with plenty of fresh air, exercise and good hours and bathing, this conditon will soon disappear.

In this connection it is well to remember that erythema is a puzzling condition at all ages, for example, I remember seeing a patient who noticed that he had an eruption on his skin every June. On talking the matter over with him I came to the conclusion that it was caused by something that he was in the habit of eating. I found that he was very fond of strawberries and ate them in excessive amounts, so the following June I persuaded him not to eat any strawberries through the entire month, with the result that for the first time in years he did not suffer any eruption. This condition is to be looked upon as more or less dietetic in its character and when it exists this is the line along which to search.

The skin of a newly born infant is of a deep purple hue, which quickly changes to a bright red on the establishment of normal respiration, and during the first months this redness fades until the normal pale pink is assumed. The fetal epidermis is first thrown off, this being completed in about a fortnight, and if the skin is frequently oiled and bathed this desquamation is scarcely seen. There have been at times a dermatitis described of the newly born, which is probably simply an exaggeration of the normal process. Care should be taken, however, not to confuse it with hereditary syphilis.

It will be noticed that an infant rarely perspires until about the fourth month and then generally about the head, and perspiration about the body in healthy children is not very much seen during the first twelve months, in fact, copious perspiration is a rhachtic symptom or may occur from some acute disease.

The so-called "prickly heat," or miliaria papulosa, is the most common form of obstruction of the sweat gland which is seen in children. The bright red papules which appear frequently can be tiny vesicles or pustules and are a very common sight. If these are not scratched the vesicles dry up and are followed by desquamation, but if the infant is allowed to scratch, an eczematous condition generally follows. It is astonishing how quickly this condition will appear, especially upon the back, chest and forehead. With it there is almost invariably an itching and sluggishness. It is generally produced by hot weather and excessive clothing. It is well to avoid this condition by the use of light clothing and plenty of bathing and tne use of a good toilet powder, such as boracic acid and starch. Of course, the bowels should be kept freely open and the kidneys stimulated by some such drug as niter. If it is necessary, a mild zinc ointment can be supplied or even a dilute form of carbolic acid,

but as a rule powders are preferable to washes. Holt recommends the stearate or oxide zinc, 12 parts; bismuth, 3 parts; powdered camphor, 1 part, or simple rice flour. At the same time attention must be paid to the diet, which should be fluid and easily digested.

Another annoying condition for the physician to treat is seborrhea, which may appear upon any portion of the body, but is generally seen upon the scalp, where it exhibits itself by the formation of dirty yellow crusts. These crusts on examination are found to consist of fat globules, epithelial cells, molecular débris and generally dirt. There is no tendency to improve without treatment and generally, underneath an eczematous condition develops if left neglected. It is well to wash the crusts first with oil and then remove them by the use of warm water and soap, after which a soothing ointment should be applied, such as resorcin or sulphur. Later the soap and water treatment can be renewed whenever the crusts form, and in the meantime the ointment should be applied regularly to the scalp.

Frequently there appear upon children a crop of furuncles or boils. This condition is more common in children under the age of one year. It has frequently increased in children already suffering from malnutrition and the process may be a serious one. But furuncles have appeared on apparently robust children, although it is generally possible to get a history of gastric disturbance. This condition also appears frequently in children of syphilitic origin and want of cleanliness sometimes seems to be the cause of the disease. Of course, the treatment must be directed toward the apparent cause. If there is disturbance of digestion or general nutrition, general tonics should be given, such as iron, hypophosphite of soda and arsenic. From time to time such remedies as sulphide of calcium have been advocated, but as a rule these are fads of the moment and are soon discarded. Of course, thorough cleanliness of the skin is the first requisite of the local treatment and the parts should be bathed with a saturated solution of boracic acid.

Holt recommends a plaster of salicylic acid, as an application, but has found better results from the use of an incision when the furuncles have pointed emptying them by compression. He then washes out the spots with a solution of bichloride—1-2,000—and places small pledgets of absorbent cotton until bleeding stops and then covers the spots with a collodion dressing. When the furuncle is more stubborn and there appears necrosis and cell development, ichthyol is an excellent application, not forgetting that early and free incision are also requisite.

Urticaria is a common disease in children, and in them differs from the same condition found in adult life, for associated with the wheals are seen papules and vesicles. This has caused considerable confusion in diagnosis. This is due to the fact that children are much more susceptible to the disease and the process is much more active so that instead of wheals are formed inflammatory papules or vesicles. There is with this severe itching, followed by insomnia. At times it is hard to diagnose this condition from scabies, or other cases may resemble varicella. It it almost always caused by some trouble in the digestive region. This is one of the most difficult conditions of childhood to treat, for in the first place, it is necessary to build up the child's system. It is well to put such children upon a milk diet, the bowels must be kept freely open and the urine should be examined and if scant, diuretics should be given. Then the physician must search for all local causes of irritation, such as rough underclothing, too tight bandages, etc. The local irritation can be relieved by some soothing application, such as subacetate of lead, or carbolic acid, or by the familiar household remedy, weak dilutions of vinegar. Frequently changes of air and location will be required before the patient recovers the usual health. Formerly scabies was quite a prevalent disease, and is still so among the poorer classes of Italians and Jews.* It is rarely seen upon the face except in extreme infancy and the lesion exhibited by the acarus is generally a papule or vesicle. The burrow is from ¼ to ½ inch long and looks like a fine black line with the acarus at the end looking like a white spot. It is sometimes difficult to find these burrows in children, but they generally can be found along the inner border of the hand and down between the fingers. The intensity of this lesion may be at times very great so that the general condition of the child seems to be seriously impaired. The use of a lens is frequently necessary to divulge the characteristic burrows and acarus. The first thing to be done is to give the child a hot bath to soften the scabs from the burrows. The child should be thoroughly scrubbed with soap and water for at least one-half hour. Then the body may be anointed with the ointment selected which should be left on over night. This treatment should be repeated for several nights in succession. As a rule, ordinary sulphur ointment, which is sufficient for adults, will not do for infants, and some such ointment should be used as

Precipitated sulphur	1 part.
Balsam of Peru	1 part.
Vaseline	8 parts.

Or

Naphthol	15 parts.
Prepared Chalk	10 parts.
Vaseline	100 parts.

It is well also afterwards to apply some soothing application.

INTERESTING POINTS IN OBSTETRICS.

BY WM. WORMLEY, M.D.

One Thousand Obstetrical Cases Occurring in General Practice.—The collection of statistics over a period of years, especially in the hands of one man, is always interesting, especially so in such a subject as forms the title of this article.

These cases occurred in the practice of Dr. Rosenthal, who has a large practice in the poorer section of Philadelphia. He reported his results some years ago to the County Medical Society, but they do not for some reason seem to have gotten into general literature, so they are reported here. Each case was seen by the general practitioner and attended at her home. In the whole series he states that he did not have one death from puerperal fever and that puerperal fever itself was unknown. He depended for antisepsis upon soap, water, the douche and several antiseptics. He was in the habit of carrying his own soap, brush and towels, together with a continuous current syringe, bichloride tablets, ether, chloroform, two pairs of forceps, plain hook scalpels, vaseline, acetic acid, aromatic spirits of ammonia, compound spirits of ether, fluid extract of ergot, hypodermic syringe, morphia tablets, iodoform, lint, borated cotton, perineum needle and silver wire. A number of antiseptics were tried, including red iodide of mercury, but finally he depended upon nothing but bichloride. He used the douche always after the birth of the child and placenta, frequently before the birth and invariably when any manipulations were necessary before or after the operation. Whenever there was any suspicion in his mind

he used the douche until the patient was well. All tears were sewed up at once, small ones with wire, large ones with silk wormgut. He never administered ergot excepting in cases of multipara with flaccid walls, after the delivery of everything. Of his 1,000 cases only 122 were American, while 644 were Russians. There were fourteen cases of twins, while the sex of the children were, males, 568; females, 446. He only met with one anomaly, which was a case of hydrocephalus which necessitated craniotomy.

There were eight cases of placenta previa, three children of these lived and five were stillborn. He had three cases of puerperal convulsions and two had convulsions after the birth of the child. He had three cases of prolapse of the cord. He also records that there were two cases of face presentation, one of which died in 20 hours, and only met with one case of face and foot presentation. The latter case was turned over to him by a midwife and he found the leg hanging from the thigh by a shred. On his applying traction it came off in his hand. He delivered the child by podalic verson. Of course, the infant was dead. He had two cases of parietal presentation, in one of which was an anteforehead presentation with the occiput in the promontory of the sacrum. Both children were delivered with instruments but died. He had 12 cross births, a large number of which were stillborn. He had 15 cases of breech presentation, 12 of which died, but six of these were premature, having died in utero. He had 19 cases of presentation by the feet, of which 13 died. He found it necessary to perform podalic version 20 times in 1,000 confinement cases. So that in 1,000 cases comprising 1,014 children 986 children were presented by the head, making a percentage of 95.5 per cent. He divided the cases of head presentation into those of the occiput, parietal and face. Of face presentation he had two. Of parietal two, leaving 964 occipital presentation. Of these 838 were left occipital anterior; 22 left occipital posterior; 90 right occipital anterior; 14 right occipital posterior.

The physician was obliged to use forceps for males, 44 times, and for females, 28 times, being a percentage of nearly two to one. In his experience the birth of a male child is the more difficult. This makes the application of forceps 72 times in 1,000 cases or an average of 7 per cent. Frequently he felt the applications were the result of meddlesome midwifery either at the hands of the midwife or himself. Of the children which were delivered by forceps 16 died, a mortality of 28 per cent. He applied the forceps 3 times above the superior strait with no mortality; he applied the forceps 12 times when the head was in the superior strait with a mortality of 5; he applied the instruments 53 times when the head was in the inferior strait with 45 children alive and a mortality of 8. He applied the instruments 4 times in the vagina when the head had emerged from the pelvic outlet but the woman could not give birth to it. Of the 1,014 children which were delivered there were 57 stillbirths, a percentage of 1.18.

Curiously enough, not one of these cases was rhachitic. He found, as regards nationality, that the most difficult labors, although only two in number, were among the Italians. The Scandinavians seemed to suffer the most pain, while the Rusians were the most noisy. They seemed to have the idea that the louder the cries the easier the confinement. Next in order came the Irish, while the Americans were the quietest. He found that Slavs were a difficult people to handle for they had the custom of resorting to incantations and superstitious mummery, such as steaming wine over hot coals, over which the patient is to sit, etc., even to biting a piece of the placental tissue to cure cases of after-pains. They are the most prolific of people, he being called in two cases to attend the same woman twice in the same year.

He met in all these cases but one anomaly, a uterus bicornu in which the placenta was retained and was removed the third day through the assistance of a neighboring surgeon.

The Use of Antiseptics in Obstetrics.—Undoubtedly the proper idea in obstetrics is the same as in abdominal surgery, that the parturient woman should be looked upon as a wounded woman and absolute cleanliness practiced.

In this connection it it interesting to note that the bacteriology of the pregnant and puerperal vagina has become a subject of importance. Gonner examined the vaginal secretions of 32 pregnant women and found that it did not contain the pathological micro-organisms that are usually found in puerperal infection and therefore came to the conclusion that auto-infection was impossible and therefore vaginal antiseptic douches were unnecessary. On the other hand, at the same time Doderlein found both staphylococcus and streptococcus in the lochia, and came therefore to the conclusion that auto-infection is possible and prophylactic vaginal douches are required. Strangely enough, there were found results confirming both these views, until the year 1902 Doderlein endeavored to reconcile these statements in his monograph in which he distinguished between two varieties of secretions, normal and abnormal. The former is sterile, while the latter frequently contains pathogenic organisms, streptococci being commonest. On the other hand Kronig comes exactly to the opposite conclusion, believing that the vaginal secretions of pregnant women only contain organisms which grow aerobically upon the ordinary media at body temperature, except yeast and gonococci, and therefore never contain septic bacteria so long as they have not been examined. Therefore, he gives the dictum that the vagina of every pregnant woman is aseptic so long as she has not been examined.

Kronig finds that the vaginal secretions possess marked bacterial power which is due to chemical substances in the secretions, perhaps acid, antagonisms between vaginal and imported bacteria, phagocytic action and lack of oxygen. In reply to investigators who claim they have found streptococci and other bacteria, Kronig believes the results, if obtained, were due to bacteria which were carried into the vagina from the vulva in collecting the secretions. To prevent this he uses a double tube invented by Menge. Williams using this double tube, comes to the same conclusion as Kronig, which is that there are no pathogenic germs in the vagina except gonoccoci whether the secretion is normal or abnormal. If this is true the prophylactic vaginal douche is useless. As yet the majority of the profession have not accepted this view of Williams and Kronig and continue using the antiseptic douches.

Obstetrical Observations on the Negroes of Charleston.—De Saussure prepared an interesting paper some years ago on this subject. The negress differs from her white sister from birth, her weight is nearly a pound less than the average for the white female baby. Her menstrural life begins early, generally about 13. The child-bearing period is longer, for the average age at the menopause to be 48.6. The negress is very free from menstrual disorders and amenorrheas. Dysmenorrheas and menorrhagias when found are due to anatomical defects or lesions, not to nervous causes. It is a physiological not a pathological condition with them. They have more children that the whites, for in 107 fam-

ilies an average of 6.8 children to each exists, 19 of the mothers were primipara, but 12 had 12 or more full term children. In a colored population of about 32,000 during thirteen years there were 14,000 deliveries, compared with whites for the same time in a population of about 24,000, 7,140; yet the ratio of twins stood 9.63 per 1,000 colored to 9.52 per 1,000 whites.

Until recent years the negroes did not care how large their families were, now they show the up-to-date tendency to shirk the responsibilities of paternity and maternity. Pregnancy in the negro is a physiological condition, her habits, occupation and diet are the same as with the non-pregnant. The only exception is the fact that the negress seems liable is eclampsia, and it appears to be becoming more frequent. It occurs before labor in the latter months of gestation. In ten years from 1883 to 1893 (exclusive), 11,074 pregnancies (colored), deaths from eclampsia, 51; 6,054 pregnancies (white), 19 deaths. Lusk says it is reasonable to estimate that for every death there are two recoveries, and under this ruling we would have 151 cases in the 11,074 colored and 9.4 cases per 1,000 white which is more frequent than Galaban and Kleinwacher estimate for Europe (1.5000) and larger than Parvin's (1.3000) for this country. According to the Traube-Posenstein theory, "ahydremic condition of the blood" might be advanced, for the negro is becoming poorer each day, and this poverty means anemia.

An abortion occuring before the fourth month is considered a trifle summoning neither midwife nor physician. Hence, it is hard to speak on this subject. In five years' dispensary work 18,000 colored people were treated; abortions, criminal and non-criminal, are very frequent; much more so than in the whites, at least 3 to 1. In 57 women closely questioned only 3 had not aborted and the other 54 had had 142 abortions between them. There were reported in five years, 1888 to 1893, 251 abortions colored, 84 whites; but since no physician or midwife attends the earlier abortions no report is made of them, so these figures do not indicate the loss of life. Of the causes, first comes syphilis, from which 70 per cent of the Southern negroes suffer either through inheritance or by acquisition. The next factor is medicine taken for abortive purpose. This is a sample history: A girl misses one, two or more periods; she becomes alarmed, purchases ergot, rue, tansy, pennyroyal or some cathartic, takes it, and after a few days of pain and hemorrhage passes a clot of blood and the abortion is over; septic infection rarely follows, and no one is the wiser.

Labor in the negro is a simple act; so much so that comparatively few of them are attended by physicians, especially as the midwife's charge is only $5 for a confinement and ten days' nursing. The labors are attended by these midwives who have absolutely no knowledge. They sit by the bed and tell the patient to bear down. If the woman is not confined in six or eight hours, then they send for a physician. The midwife's whole knowledge consists in an ability to cut and tie the cord and to extract a retained or tardy placenta by having the patient blow into a small bottle. Whether the position is right or wrong she has no idea. They rarely make an examination, it would be useless, for they know nothing of the relationship of the parts and they give no medicines. The following description will answer for many thousands of cases: A patient calculated generally very accurately by the tenth lunar month and by four and one-half months after quickening that she will be confined at such and such a time; she engages a midwife to attend her, labor begins, the midwife is sent for; she makes the bed ready, that is, she places some old carpet, cotton bagging that has been used as a house cloth or door mat, on the edge of the bed; over this two or three or more soiled petticoats or dresses are laid, and then the patient lies down.

If all goes well the labor is over in from one to two hours multiparæ; eight to ten hours primiparæ. Fifteen observations gave an average duration of 6.9 hours in primiparæ. The cord is cut, and then in fifteen or twenty minutes, if the placenta is not expelled, a bottle is handed to the patient and she blows into it and the afterbirth is generally pushed out of the vagina. The cord is never pulled on, nor is the placenta examined to see if the whole of it has been expelled. The genitals are then washed with a piece of old soiled rag dipped in warm water. The abdomen is bandaged tightly, the labor is over, and the room shut up closely; no ventilation allowed. No antiseptic precautions are taken, although no examining finger is ever introduced. Once a day the genitals are washed off with dirty water and rags. The napkins (for which some piece of soiled clothing answers) are changed four or five times in the first twenty-four hours, and then three or four, and by the third day twice. On the morning of the third day a dose of castor oil is invariably given. On the eighth day the woman is up, and out shortly afterwards. From 1880 to 1892 inclusive: Births, 12,254; stillbirths, 2,066; twins, 138; 14,358 deliveries, with but 57 deaths from puerperal fever. The bane of the negro's life is fever, and whenever there is a rise of temperature a physician is sent for. Filth, dirt and lack of ventilation is common in the lying room. The family cooks, eats and sleeps there. Old rags and soiled clothing are always around and about the parturient woman. Carpets, rugs and house cloths answer for India rubber and draw sheets. A wooden pail answers for a commode, and is used in common by the parturient woman and all of her children under 4 years of age during the day, and by the whole family at night; furthermore, the pail is not emptied immediately after use, but is left for hours. The parturient woman uses it in bed for the first twenty-four hours, after that she gets up to urinate or stool. When the atmosphere gets too foul, it is disinfected by burning a piece of rag in the room. In something like 14,600 deliveries, births, stillbirths, premature labor and abortions there were only 57 deaths from puerperal fever. The significance of those figures is that where no examinations are made septic infection is almost unknown. The autogenetic theory of puerperal fever falls to the ground. Foul atmosphere and filthy surroundings lose their terror, and the examining finger stands convicted of murder. Surely this is a strong plea for diagnosis of presentation, position and condition by external manipulation. At the same time we must call your attention to this fact: The negress has little or no fear of parturition; she does not look on it as dangerous; it may be painful, but not dangerous; she has no dread as to the outcome for herself or offspring; she expects to be up and out in a few days; if the child dies she will beget another; no elaborate preparations are made for parturition. During the nine months of her pregnancy she will lead her usual life, eating, sleeping and living as if she were not with child, and now at the end of the nine months she proceeds to empty her uterus as she would her bladder or rectum.

The Management of the Nausea and Vomiting of Pregnancy.—Nausea and vomiting are so general on pregnancy that very few women are not affected in some way by them during gestation, usually so mild that they call for little treatment, yet they may be severe, rectifying themselves by the fourth month

of utero-gestation. Dubois claims to have seen twenty fatal cases, but Carl Braun in his wonderful obstetrical experience of one hundred and fifty thousand cases saw none terminate fatally. There may be marked exhaustion and emaciation, with red, dry tongue, dry, harsh skin, fetid breath, epigastric tenderness, fever, extreme thirst and constipation. This reflex functional disorder of the stomach long continued, is transformed into marked organic structural changes of the gastric mucous membrane.

Hennig regards the milder form of vomiting of pregnancy as due to some wound, inflammation or dislocation of the uterus; a distended bladder or rectum may also cause it. The treatment is the removal of the cause. The more severe form is sympathetic, and a neurosis. Nux vomica and cocoa essence, or cocaine, are sometimes useful in these cases; dilatation of the cervix he has rarely found successful. The induction of labor he considers the only efficient treatment for severe cases. Sanger had seen one case in which the vomiting was caused by carcinoma of the stomach; in another, laceration of the cervix provoked vomiting which ceased when the laceration was operated upon.

Gunther regards the affection as a reflex neurosis, and treated five cases by galvanism, the positive pole being placed against the cervix, the negative between the eighth and twelfth dorsal vertebræ. From two and a half to five milliamperes were employed for seven to ten minutes. He regards the interruption of the current as the most potent cause of abortion following electrical treatment, and therefore takes special pains to avoid the accident. His results were good.

Bennett's theory proposes an explanation of the nausea and vomiting by the existence of some structural lesion of the cervix uteri, while Hewitt's theory traces the dependence of these symptoms on some kind of uterine displacement or reflexion. Probably no one theory is true invariably. Experience shows that no fixed rules can be laid down. It is prudent, however, to consider all treatment in the following order: Hygienic, Dietetic, Medicinal, Gynecological and Obstetrical.

1. *Hygienic.*—Exercise good common sense.

2. *Dietetic.*—No fixed rules can be laid down even for the same woman in all pregnancies. Consult personal taste and inclinations. Sometimes the food most indigestible for non-pregnant women is craved in pregnancy and becomes digestible. Koumys is at times much relished, easily retained and fairly nutritious. The partaking of a small quantity of food with some palatable wine early each morning on awakening, before arising, controls the stomach irritibility. Eating a meal at the house of a friend, with pleasant company and surroundings, is sometimes a pleasant measure. When all foods and nutritious drinks are totally rejected, and the pregnant woman is fast passing into a condition of practical starvation, an organic disease of the gastric mucous membrane having developed, withhold all nourishment from the stomach, and put the diseased organ completely at rest. The importance of the principle of rest, as applied to a fractured or dislocated limb, is not more urgent than is the securing of absolute quiet to this diseased organ. The human body can be sustained for weeks—even for months—by rectal alimentation, no food except merely the smallest quantity of fluids for drinking being digested by the stomach. Enemata of peptonized milk, in alternation with meat extracts, to which from a half-ounce to an ounce of whiskey or brandy was added, are necessary.

3. *Medicinal.*—The remedies recommended for the cure of the nausea and vomiting of pregnancy are many. Those which the experience of modern practice had proved to be trustworthy are very few. Notwithstanding that these gastric symptoms resulting from pregnancy cease spontaneously at times without any apparent cause, it is the most natural inference that this improvement results from the use of any medicament then being administered, although the change for the better was in fact purely the spontaneous result of Nature's efforts. Among the most powerful remedies are tincture of nux vomica, oxalate of cerium, tincture of iodine, morphine and atropine in combination and hypodermically administered, cocaine, atropine and the bromide of sodium. It is impossible to give the specific indications and contraindications for each, for they are not known, if they exist. Faradization of the dorsal spine is recommended. Tincture of nux vomica, in from one to three drop doses, with water, before food, sometimes answers well, as does the tincture of iodine. Oxalate of cerium, even in large doses, very frequently fails. Morphine with atropine, given subcutaneously, succeeds admirably at times. Cocaine given by the mouth, or applied to the cervex uteri, is worthy of trial. But the two remedies which I have administered with the greatest satisfaction are atropine and the bromide of sodium. The former is given in aqueous solution, in doses of one-two-hundred-and-fortieth to one forty-eighth of a grain three times a day, increasing from the minimum dose for the full physiological effect.

4. *Gynecological.*—The gastric disorder does at times depend on erosions and granular degeneration of the cervex uteri, but not always. The theory of Graily Hewitt, that the symptoms referred to result from uterine versions and flexions, is a theory both true and false. The worst cases may show no alteration in circulation, structure or position of any part of the uterus. There was no local disease of any kind. The most which can be said in reference to this section of management is that, after a thorough physical exploration of the condition of the pelvic organs has been made, any abnormality found should be corrected as speedily as practicable. Generally a considerable amelioration, if not a total arrest of the gastric symptoms will ensue when the local mischief has been improved.

5. *Obstetrical.*—Cases resisting all methods of treatment to—hygienic, dietetic, medicinal and gynecological—call for special treatment. Death may follow unless means are taken to empty the uterus of its contents. There can be no question to a rational mind as to the perfect justifiability, on moral and legal grounds, of the induction of an abortion or a premature labor (almost always the former) in this class of cases in order to prevent death. A fearful responsibility, it is true, it is; and in consequence of its gravity it is an obligation which should be shared with another for our own protection, if for no other reason. All the circumstances having been fully stated to the husband and immediate family, and their entire consent having been obtained, the abortion is induced to save life. So indisposed are many physicians to assume this responsibility that this obstetric operation has no doubt been quite frequently deferred until too late. Having satisfied ourselves that naught else can be done to arrest the gastric irritability and tide the woman over until term, the time to empty the uterus should not be postponed. If unduly delayed, convalescence may be greatly protracted, or death may follow from exhaustion and inanition; or, possibly, some secondary affection may develop.

A STUDY OF FOOD IN HEALTH AND DISEASE.

BY W. E. ALEXANDER, M.D., PHILADELPHIA, PA.

THE appetite is a dangerous guide to trust. In health it may be deceptive, and it is certainly so in disease. It gives no clue as to the amount of material wasted and the quantity of food thereby required to make up for this waste. It is necessary to look for other criteria in order to find the amount of material wasted by a patient in order to determine how much food he may require. This is a very puzzling question, and has been partly explained from the study of biology and partly from clinical experience.

It is a common experience of mankind to notice that the amount of food eaten by a person in good health does not necessarily correspond to the size or the weight. For example, a delicate, slender person may be a very hearty eater, while on the other hand, a stout person may eat scarcely enough, as the phrase goes, "to keep a bird alive." Thus, it is seen at once that the amount of food consumed is not criterion to the amount wasted.

Von Noorden, of Frankfort, has gone into the subject very thoroughly, and his experiments and conclusions are as clear as anything we have upon this subject. According to this authority, he believes that investigation has followed the wrong clues; that it is necessary to determine the amount of material wasted rather than the amount of food introduced into the body, and that the amount of food introduced is adjusted and regulated accordingly; and, if this were not so, the equilibrium of nutrition would be disturbed. Von Noorden believes that the reverse never takes place; that the supply of food received by the body controls its waste. This is a fundamental rule of biology to which there is no exception. In former times it was thought that the loss of appetite was a sign that nature did not require as much nourishment. Nowadays we have learned differently.

Taking up the subject of material wasted in disease, we find at once that there is less wasted normally than in health for many reasons. In the first place, when a man gives up his regular occupation his muscles do less work, owing to his confinement in bed; also, when the loss of body heat is restricted from sojourn in a room of even temperature or in bed and owing to the lack of regular stimuli reflex irritation is diminished, then the amount of decomposition within the body becomes considerably less. It has been estimated that the amount of oxidization of a person moving about freely and performing light work is about 20 per cent. greater than it is in the same person confined to bed, or even to indoors. If the person has been used to hard manual labor this difference may extend even to 60 per cent. The amount of decomposition in the ordinary person is regarded as equivalent to about 38 calories for each kilogram of body substance. Therefore in disease the amount corresponds to only about 32 calories per day.

These rapid external influences govern a patient in disease; but we must not forget that the disease in itself may produce certain changes in metabolism. In the first place many diseases diminish the amount of oxidization. This belief was formerly held as regards chlorosis, diabetes, cancer and diseases of the organs of respiration and circulation. But nowadays it is considered that metabolism in these diseases goes on at about the usual rate. However, it seems a fact that in every disease there are times when the amount of material waste is extremely diminished. This period is uncertain and not clearly demonstrated by the experimentors. In other diseases, however, metabolism is undoubtedly increased beyond the normal Such conditions are fever, temperatures, accelerated and altered respiration.

All these conditions bear upon the nervous force and produce waste of oxidizable material, and therefore require an increased supply of nutriment to keep the conditions normal.

Again, there are a number of diseases in which the food is improperly absorbed from the stomach and the intestines. Therefore, in these cases, as a man thrives on what he digests there is more or less food required to make up for the body's waste

Again, in some conditions, such as diabetes, part of the oxidizable material which is absorbed leaves the body only partly oxidized and therefore these cases require more food than during health to preserve the proper balance.

According to the experiments of Von Noorden, the most practical results are obtained by the bedside and the weight should be made the judge as to whether sufficient food is given to make up for tissue waste.

Von Noorden believes that the question of the quality of the food is not of as much importance as the quantity. He believes that too much attention is paid to permissible and non-permissible foods and the elimination of this and that article of diet until ridiculous petty distinctions are made in the subject of diet. He thinks it is far better to pay attention to the subject of quantity. Here is the place to study the relations between income and expenditure; between food and work; between the nourishment introduced and the maintenance; the increase and the decrease of bodily substance. If it is possible to keep track of these figures it is then possible to settle the question of diet, learning first how much a patient requires and how much he is to eat. The question of what he is to eat is, of course, of great importance in certain diseases, such as stomachic or intestinal diseases or in diabetes. But in the great majority of cases it is a matter of quantity.

With this introduction I will present a study of several cases to illustrate the treatment of cases of disordered digestion and assimilation which may be of interest to the profession.

The first case is that of a woman, married, and with a child a year old. She has lost some 20 pounds in weight, and yet her pulse, temperature and physical condition seem to be normal. She has no signs of cough or of any organic disease. She suffers much from acid eructations after eating and several times a week she has paroxysms of pain extending through to the back. Occasionally she vomits, but not regularly. She is constipated, but the urinary secretion is normal upon examination. She had been ordered by different physicians to take malt liquors to increase her strength and she undoubtedly has received occasional relief from their use. She has tried all kinds of foods but without any special results. Taking up the study of her case we find that her condition depends, not upon the sort of food that she eats, but upon the condition of her blood and her stomach. Therefore, our idea is to get her stomach and blood into good condition and to encourage the oxidization of her food by the use of fresh air and to give her bland food and such medicines as will allay the irritability of the gastrointestinal tract. An excellent form of prescription in these cases is the use of carbolic acid with a fluid extract of cactus grandiflora as recommended by Davis. Good milk with warm water, and milk with egg, and flour gruel are also excellent as an unirritating food taken in small, frequently repeated doses. With this, the patient should have fresh air and should abstain from the use of alcoholic liquids.

The next case of this sort is that of a man of middle age. He is very stout and has taken but little exercise for many years. He is a moderate drinker, but rarely has become intoxicated. As a result he has increased shortness of breath and rapid pulse. With this he has the history of rapidly increasing indigestion, which is shown in a sense of fulness of the stomach after eating followed by gaseous eructations with a sense of nausea and occasional attacks of vertigo. These attacks of vomiting have become more marked of late, until at times they become quite serious in their character, being accompanied with extreme vertigo, numbness of the extremities and much perspiration. On physical examination I find that his condition is normal outside of his great weight. His heart, lungs and kidneys seem to be in fairly good condition.

Undoubtedly it has been the habit of this patient's life which is at fault. He has taken less oxygen through the medium of the lungs than was required to keep his system in condition. In addition, the constant use of alcohol has decreased the affinity of the blood for oxygen and therefore the carbonaceous products have not been fully oxidized, but have accumulated as fat, adding nearly 100 lbs. to his weight. These attacks of vomiting seem to be conditions of vasomotor depression. It is by the removal of the cause of his condition and the careful induction of hygienic measures that we hope to be able to restore him to proper condition. We must increase his vasomotor and cardiac nerve force. We must improve his gastric and intestinal digestion and endeavor to obtain a better condition in his blood. Such treatment would necessarily produce slow results and relapses can be produced by such trifling causes as to make the treatment at times discouraging. In the first place, it is better to cut off at once the use of all alcoholic liquids, even down to the mildest form of beer, for undoubtedly alcohol impairs the functions of the blood, while it also depresses the respiratory and vasomotor nerves. In place of the alconol he should take a mildly stimulated diet in moderate quantities. Such a diet consists of light twice baked bread, good milk, meat broths, the simpler forms of fish, and if these are well borne, tenderly cooked meats and vegetables should follow. He should take plenty of outdoor exercise by riding and later by walking and a mild form of home gymnasium to encourage the absorption of more oxygen. The use of some tonic, such as strophanthus and nux vomica, or strophanthus and nitro-muriatic acid, are excellent in these cases, and it is surprising what can be done for this class of patients.

If such a patient will follow carefully the treatment outlined for him, he will lose rapidly in weight and will find that his respiration and circulation will improve. The most discouraging feature about these cases as a rule is, however, that they have either lost the desire or the ambition to follow out this treatment, or else they become very rapidly discouraged. The condition of life into which they have fallen is a matter of growth of years, and as a rule it is like the formation of bad habits in other respects; it requires a strong effort on the part of the patient to effect a cure. The physician can stand behind to encourage, stimulate and guide his patient, but the larger portion of the work must be done by the patient himself.

Undoubtedly the use of mild gymnastics in these cases is of excellent effect, and nothing is better or easier to follow than the system devised by Checkley. This authority has devised a system of natural gymnastics in which the exercising is done, not for strength or especially for vigor, but for health, and if it is followed out even to a slight degree it is astonishing what results can be obtained. It is well for the physician to talk seriously to these classes of patients if necessary to stimulate them to do this work. Many patients regard the use of gymnastics at their age of life as nonsense, or as a fad, and therefore if the physician can impress them that they are in a moderately serious condition, from which they can be rescued by the use of these exercises he has done his patients a great favor. Many physicians are apt to shirk this duty for this class of patients is opinionated and very set in their ways; but, it is astonishing what can be done, even in the most unpromising cases. I remember well a case in which a gentleman who had been a hard outdoor worker for many years, suddenly by the death of his partner, was thrown into the most severe nerve racking office work, looking after accounts and directing the duties of a large clerical staff. In the course of a year or two he became very irritable, very nervous; his digestion was completely upset; he suffered from real and imaginary ills, until it was almost impossible for him to endure himself or his family live with him. When these mild gymnastics were first suggested to him he laughed at them as a modern fad; but, being persuaded to try a few and receiving good results, he gradually got into the habit of taking them and the improvement in his condition in six months was so marked that it was noted by all his friends and business acquaintances. In this case the incentive to work and regularity was contributed by the report which I compelled him to make of the days on which he exercised and the time which he put to it. By making him keep this diary I was able to get him to practice with moderate regularity.

THE QUESTION OF MEDICAL NOMENCLATURE.

BY G. R. REYNOLDS, M.D., PHILADELPHIA.

IF all our present system of nomenclature could be destroyed in a night and rebuilt, based upon the knowledge which we have to-day, it would undoubtedly be a great benefit to medical science, for our ideas concerning the nature of diseases and their treatment are naturally influenced by names and classifications. As information becomes more accurate it is most important to modify and change names and classifications so that they will become a help instead of a hindrance. But as medicine has been a growth, evolving little by little newer points from year to year so much of our nomenclature, necessarily based upon erroneous, ignorant or misleading data, is fast becoming obsolete.

It was the custom, especially during the early part of this century to apply the name of some investigator to such disease as he may have described. It has been the ordinary history that some authority a little clearer in vision than his fellow practitioners has been able to gather together a group of cases to give clearly their symptoms and to suggest some idea as to their etiology and diagnosis. Immediately, such a disease or group or diseases was christened with the name of their describer. But with the advance in medicine there has come additional light on these old diseases so that the old time name does not fit. In fact, it may be most misleading. Instead of boldly casting aside this name it has been the tendency of the age to retain the old name and then attempt to redivide and reclassify the varieties. The last stage of such an old name is seen when the disease retains this term among the public, but does not represent anything definite to the practicing physician. Such has peculiarly been the case in the history of the so-called Bright's disease. Even so well

trained an observer as Osler, in his classification of diseases of the kidney, retains this term in describing "acute diffuse nephritis" and certain forms of chronic renal diseases.

This may be very clear to one who is conversant with Professor Osler's views on the subject, but when some other writer confines the term to some other form of Bright's disease, it is easy to see how great the confusion can be to the reader who may not be thoroughly familiar with the views which these different men hold.

Undoubtedly, Bright never lived to recognize the full clinical features of the disease which has rendered him immortal. He probably was ignorant of its most significant feature, the tube cast. Delafield in his scholarly address some years ago before the Association of American Physicians, pointed out that there is no such disease as Bright's disease, and that intelligent physicians should not attempt to describe varieties of a disease which does not exist.

Osler divides diseases of the kidneys into malformations, movable kidney, circulatory disturbance, anomalies of the urinary secretion, uremia, acute Bright's disease, chronic Bright's disease, amyloid disease, hydronephrosis, nephrolithiasis, tumors of the kidney, ascitic disease of the kidney and perinephritic abscess. At the present state of our knowledge it is impossible to classify kidney diseases according to their causes, and therefore we must divide them acording to the part of the kidney involved or according to the nature of the morbid process. It would seem that the most scientific, clearest cut and convenient method would be to divide them according to the morbid processes involved, these three processes being *congestion, degeneration,* and *inflammation.*

Congestion, whether it is acute or chronic in its character, produces an accumulation of blood in the veins and capillaries of the affected part, with the result that local symptoms and disturbances of function are produced, while degeneration produces more profound change in the parts, whether it is acute or chronic in its nature. It is caused by some stimulant action such as poisons, other diseases and disturbances in the circulation which produce disturbance of function and may produce inflammation, and as yet, as far as we know, is not affected to any great extent by treatment. Inflammation, on the other hand is marked by three essential symptoms which either may occur together or appear separately. These are an escape of the elements of the blood from the vessels, or a formation of new tissue followed by death of tissue. In other words, *exudative, productive* and *necrotic inflammations.* Of course, exudative inflammation is more or less trifling in its character, being of short duration, leaving behind no permanent change and being affected favorably by suitable treatment. Productive inflammation, on the other hand, is a more serious matter, producing permanent changes in the involved parts and its acute form is very apt to degenerate into the chronic. Treatment is not especially satisfactory and there is much variety as to the quantity of the exudate and the amount of the new tissue.

If we divide the so-called diseases of Bright under these heads, it can be seen that this classification is simple and practical. First taking the *congestions of the kidney,* they naturally divide themselves into two classes: the *acute* and *chronic,* depending upon the causes which affect the circulation and cause venous congestion in the kidneys. Acute congestion is produced by ingestion of poisons, by injuries, by surgical operations and by, unfortunately, unknown causes. It can appear in kidneys previously normal as well as those already diseased, the marked symptom being, the diminution or suppression of urine, although there may be present casts and albumin. This condition is a transitory one, but when it occurs in surgical operations or in injuries it may lead to a fatal termination.

The causes which produce chronic renal congestion are long continued mechanical interference with the circulation of the blood which produces congestion elsewhere as well as in the kidney. The pathological changes occurring here are flattening of the epithelium, of the cortex tube, with dilatation and thickening of the capillaries of the glomeruli and congestion and dilatation of the pyramid veins. The amount of diminution in the urine depends upon the intensity of the congestion. Specific gravity may fall to 1010 or rise to 1035, while the excretion of urea which is usually about 10 grains to the ounce may rise to 21. If casts and albumin are present they are found only in very small quantities. The diminished production of urine and the possibility of chronic nephritis are the unfortunate sides of chronic congestion.

When it comes to the next division, which we have termed renal degeneration, we must remember that this process is always secondary, resulting from the introduction of inorganic or organic toxins, or from the effect produced upon the body by chronic diseases elsewhere, or by disturbance of the circulation, which are undoubtedly based upon the same etiology. The change in the kidneys occurs in the renal epithelium, in which cells are developed degenerative and necrotic changes. Of course, these changes will occur so quickly that the blood vessels may become irritated and there may be added congestion. Therefore, in this classification it is well to include those in which the kidney has both inflammatory and degenerative conditions in which the degeneration is more important and the inflammation is secondary. Acute renal degeneration is found frequently in infectious diseases and in poisoning with such agents as arsenic, phosphorus or mercury. It occurs in all kinds of severity, and the renal epithelium may be simply swollen and granular, or go on even to the condition of actual necrosis, and of course, the clinical symptoms correspond closely to the actual amount of degeneration. The urine itself is possibly somewhat diminished in quantity and contains a little albumin with occasional casts. But many cases of this sort are so mild that there are no special symptoms. Disturbance of the circulation and dropsical conditions are not found.

Naturally chronic degeneration of the kidneys comes from the same causes as those which produce chronic congestion. It is always, therefore, a secondary lesion. The changes in the kidney are marked. The epithelium of the tubes is swollen, granular and filled with fat, and there are frequently changes in the glomeruli. The amount of urine varies from time to time, may be abundant, scanty or suppressed and albumin and casts are frequently present. This degeneration of the kidney has a decided effect upon the appearance of the patient. He loses flesh and strength, becomes bloodless and finally passes into the so-called typhoid state. Disturbance of the circulation and dropsical conditions are not common in this form of kidney disease, but this lesion follows some other serious morbid state, so that it is frequently difficult to differentiate between the loss of health due to the change in the kidneys and loss of health due to the original disease.

When we came to the subject of the *inflammations* of the kidney we see readily the division which is naturally the most important. Delafield divides these into the acute exudative nephritis, the acute productive or

diffuse nephritis, chronic productive or diffuse nephritis with exudation, chronic productive or diffuse nephritis without exudation, suppurative nephritis, and tubercular.

This is probably as thorough and careful classification as can be made at present.

Acute exudative nephritis is characterized by congestion, by an exudation of plasma and emigration of white blood cells and a diapedesis of red blood cells, to which phenomena are added either swelling or necrosis of the epithelium of the kidney with changes in the glomeruli. There can be three forms of such a nephritis: A mild form, producing symptoms during life, but leaving no special lesions in the kidney; a more severe form with inflammatory change found in the kidney after death, and a form characterized by the production of pus cells in large amount.

The most noted change in the kidneys in this condition pathologically is in the capillary tufts of the glomeruli. These capillaries are ordinarily covered on their outer surface by flat enucleated cells, so that the tuft is not made up of uncovered capillary, but each separate capillary throughout its entire length is covered over with these cells. There are also flat cells which line the inner side of the capillaries, although not so uniformly as in the case of capillaries elsewhere. Now in exudative nephritis the swelling and growth of these cells change the appearance of the glomeruli, although it is difficult to tell how much these changes in the glomeruli interfere with the blood passing through their capillaries.

The symptoms of this condition are slight in character. It is only in the more severe cases that there are decided changes in the urine, whene it is diminished in quantity, or even suppressed, its specific gravity being high and the quantity of albumin large and the casts numerous, hyaline and granular. It need not be that the quantity of albumin and number of casts are in exact proportion to the severity of the nephritis, for in many cases large quantities of albumin, casts and white blood cells have been found in the urine of kidneys which showed no change at the autopsy.

The invasion of this disease is sudden and marked with a high temperature and considerable perspiration, headache and stupor are developed quickly and continue through the condition. As to prognosis it is a fatal form of nephritis.

When it comes to the question of acute productive nephritis, we find that this is the most serious of all forms for it involves so many of the structures of the kidney and its lesions are of a permanent character. It occurs following scarlet fever and in diphtheria, in pregnancy and frequently as a primary nephritis, even when there is no history of exposure to cold. The lesions are large and marked. The kidneys are smooth at first and large and later, sometimes a little roughened. The pyramids are red and the cortical portion is white mottled with yellow. There are the same lesions as are described as belonging to exudative nephritis with the addition that changes which are found in the earlier stage give the characteristic lesion, this being a growth of connective tissue in the stroma and a growth in the capsule cells of the Malpighian bodies.

The symptoms of acute productive nephritis are marked. The urine is scanty, highly colored and of high specific gravity, containing red and white cells, casts of all kinds and much albumin, while the patient presents all the symptoms of so-called typical Bright's disease, the headache, the delirium, the stupor, the restlessness, the neuralgic pains and loss of appetite, the retinitis and diarrhea, and increased arterial tension. The prognosis is rather bad and the treatment rather unsatisfactory.

Chronic productive nephritis with exudation is simply another form and not a separate lesion from the same condition without exudation and it is a question whether it should not be grouped with the other condition as the symptoms are very much the same. In the first form there is an exudation of serum from the blood vessels and it is present in the urine in considerable amounts. The glomeruli are changed considerably, while the arteries remain unchanged as a rule, although they may be the seat of an obliterating endarteritis. This disease occurs frequently as a primary disease, especially in young children; or, it may follow acute diffuse nephritis, chronic congestion or chronic degeneration. One of the principal symptoms is the fact that the urine varies in quantity from time to time. When the nephritis is more insignificant the quantity of the urine is normal. With the exacerbations the urine becomes scanty or suppressed. The specific gravity is apt to be low, while the urine contains albumin and casts. Dropsy is a regular symptom here, and it is uncommon to find a patient without this symptom. In chronic diffuse nephritis without exudation the glomeruli remain normal in size as a rule and do not show the changes seen in the other condition, while the urine is not especially valuable for diagnosis, in fact, it is frequently necessary to make the diagnosis without reference to the urine and the general symptoms. There is headache, restlessness and sleeplessness; or, hemiplegia may be the first symptom of the disease. Delirium, or a mild or violent stupor or coma may come on quite suddenly. With these attacks the arteries are contracted, the temperature is raised and the patient is in a state of acute uremia.

If we will accept this classification of Delafield it simplifies very much the question of treatment for this reason: Acute renal congestion can be relieved by the application of heat to the surface of the body, while chronic congestions are best controlled by such therapeutic remedies as stimulate the heart and dilate the caliber of the arteries. Unfortunately, we have no means as yet for influencing acute degeneration of the renal epithelium, while chronic degeneration seems to be a condition which we are unable to treat, unless the recent surgical treatment of the kidney by Professor Edebohls admits of application here. There has recently been published by this authority a report of a number of cases in which he has operated upon cases of nephritis with brilliant results. It is as yet too early to form a definite opinion of this treatment, but the results obtained for the moment at least look very flattering.

In the acute exudative and acute diffuse forms of nephritis of course it is necessary to reduce the severity of the nephritis and to regulate the circulation. For this purpose cups over the lumbar region or over the whole body, and the internal use of opium, aconite, chloral, sulphate of magnesium are most excellent. The disturbances in the circulation are largely the cause of the dropsy and the cerebral symptoms, and therefore, to affect the labored heart and the contracting arteries, such drugs are necessary as chloral hydrate, opium, nitroglycerine and nitrate of amyl; or venesection, sweating and purging.

In chronic forms of nephritis the climate and the mode of life form the important parts of treatment. Warm, dry climate and an out-door life are valuable, but the medical treatment must be symptomatic in its character to relieve the anemia, the dropsy and the dis-

turbance of the circulation as they arise. It would seem as if by adopting this form of classification distinct advance could be made in spreading a specific treatment of the so-called Bright's disease.

PATHOLOGY AND TREATMENT OF GALL-STONES.*

BY LOUIS FRANK, M.D.,

Professor of Abdominal and Gynecological Surgery in the Kentucky University Medical Department; Consulting and Visiting Surgeon to the City Hospital, etc., Louisville, Kentucky.

ACCORDING to careful statistical studies by Robson, Kehr, Brockbank, V. Reckling-Hausen, and others, gall-stones occur in eight per cent. of all individuals. In Strasburg it is said they were found in over twelve per cent. of all bodies coming to autopsy. Kehr believes that two millions of the inhabitants of Germany have gall-stones or other disease of the gall-bladder.

If this be true, and we have no reason to doubt it from our observation and experience as practical surgeons, the attention of the general profession should be called to the disease, to its dangers, to the symptomatology, and especially to the beneficient results of operative intervention for its cure, for there is hardly an operation in surgery yielding such grateful results to the patient.

If we exclude congenital malformations and cancer, all diseases of the gall-bladder may be looked upon as of bacterial origin, though the coincident occurrence of cancer and gall-stones is so frequent that the latter has been looked upon as a causative factor in the production of calculi, which I think is a reversal of the true relationship between the two conditions. Cancerous disease renders the gall-bladder more liable to infection, and in conjunction with the slightest obstruction to the outflow of bile there are present the two essential factors in the production of stone—*viz.*, stasis or stagnation of bile in the gall-bladder, and bacteria to cause its decomposition. And while these are the potent factors in calculous formation, the latter, without the former, may be looked upon as sufficient. To Naunyn, I believe, we are indebted for the first positive assertion of this relationship, though Louis in 1829 noted that gall-stones and gall-bladder disease was much more frequent after typhoid fever than after any other acute infectious disease.

In the light of modern pathology and bacteriology, we may look with certainty upon bacterial infection as the sole cause of gall-stones. The micro-organism may be the typhoid bacillus, the bacillus coli communis, bacillus Fraenkel-Wischelbaum, the ordinary pus producers, and possibly a few others. The direct communication between the gall-bladder and the intestinal canal, the richness of the latter in bacteria, and the great frequency of intestinal disturbances, the direct flow of blood through the portal vein from the intestinal canal into the liver, would easily explain this.

"Bacteria possibly infect the bile in two days: (1) An ascending infection through the biliary passages from the duodenum. (2) A hematogenous infection. Bacteria enter the portal circulation from the diseased portion of the intestine, and are eliminated by the liver and pass into the bile."

"In typhoid fever the evidence seems to point to infection through the blood. The typhoid bacillus is nearly always found in pure culture in the gall-bladder. If infection took place through the biliary passages we should expect to have a mixed infection with the bacillus coli or the streptococcus, as Miyaki has shown that these bacteria, at least in animals, are generally present in the lower end of the ductus choledochus."

"Futterer has demonstrated that micro-organisms which enter the portal vein begin to be excreted by the liver through the biliary channels within a few minutes. It would seem as if the specific bacillus must gain entrance into the circulation in every case of enteric fever, as Neufeld has called attention to the association of the typhoid bacillus with rose spots, and his observations have been confirmed by Cuschman, Rumpf, Scholz and Krause in Germany, and in America by Richardson and workers in other laboratories.

"Typhoid septicemia is no longer regarded as an extremely rare condition. Auerbach and Unger have obtained the bacillus typhosus from the blood during life in seven out of ten cases, and Schottmuller in forty out of fifty cases.

"If we regard every case of invasion of the gall-bladder by the typhoid bacillus, without symptoms and without pathological changes, as a case of cholecystitis, then, as we have shown, nearly every case of typhoid is a case of cholecystitis. This is confusing and unreasonable. We should limit the term cholecystitis to those cases in which there is clinical or pathological evidence of inflammation of the gall-bladder.

"The theory advanced by Naunyn, in 1891, that gall-stones are due to a catarrhal inflammation of the gall-bladder induced by micro-organisms, has been generally adopted. It is supported by experimental and bacteriological evidence. Among recent investigators Chauffard appears as the sole supporter of the old theory of a lithiac diathesis.

"According to Cushing, Dr. Welch in 1890 obtained living colon bacilli from centers of gall-stones, and suggested that they might bear an etiological relation to the formation of biliary concretions.

"Fraenkel and Krause, and v. Mieczkowski have shown that the gall-bladder in general disease conditions rarely contains micro-organisms. Yet in cholelithiasis it is almost always infected. Petersen found bacteria present in the gall-bladder in thirty-six out of forty cases and v. Meiczkowski in eighteen out of twenty-three. In all of the infected cases the bacillus coli was isolated, usually in pure culture. Other observations tend to show that the bacillus coli is the micro-organism most frequently associated with biliary lithiasis.

"Dufourt refers to nineteen patients with gall-stones whose first attack followed typhoid fever, in twelve cases within six months.

"Cushing reviewed the cases of cholecystitis associated with gall-stones operated on at the Johns Hopkins Hospital, and found then ten out of thirty-one gave a previous history of typhoid fever.

"Richardson observed large clumps of typhoid bacilli in the bile, suggesting a gigantic Widal reaction in the gall-bladder. He put forward the theory that these clumps of agglutinated bacteria serve as the starting point for the formation of biliary calculi.

"Experimental researches support the view that the typhoid bacillus induces gall-stone formation. Gilbert and Fournier produced biliary calculi in animals by the injection into the gall-bladders of attenuated cultures of the typhoid bacillus. Richardson produced a stone about 7 mm. in diameter by injecting a culture of agglutinated bacilli into the gall-bladder of a rabbit. Cushing was successful in one case in producing a small biliary calculi by an intravenous inoculation of the bacillus typhosus.

*Author's Abstract.

"Mignon believes that the formation of stones ceases with the death of the bacteria. Old stones are sterile.

If we expect to diagnose gall-stones by the presence or absence of jaundice, we will overlook 80 per cent. of the cases. The important symptoms are those ordinarily looked upon as indicating indigestion or dyspepsia. In the absence of typical colic (which is wanting in most cases) the digestive disturbances, especially with pain at the costal margin, are most important symptoms, and when accompanied by tenderness on pressure at a point about midway (or ⅓ of the way) between the umbilicus and the tenth costal margin, the diagnosis is almost absolutely certain.

In the aged pyrexia may be the only symptom, and when irregular, and in those with healthy, urinary organs should make one very suspicious.

The treatment of gall-stones contemplates primarily and principally drainage of the gall-bladder, as infection and inflammation give rise to the symptoms. In other words, the colic and disturbances are not dependent upon the presence of stone, but of inflammation, the stone being of secondary importance. This is shown by the cessation of trouble in those cases in which drainage is resorted to even with stone impacted in the cystic or common duct. Removal of the stone is usually to be looked upon as only an incident in the operation, except in those cases where it may be in the hepatic duct, when its removal is the first consideration; or, when it blocks the common duct in the cases where anastomosis with the bowel or the establishment of a fistula with the outside is impossible or undesirable; or, when the removal of the viscus is necessary or indicated.

My own opinion is that cholecystectomy, other things being equal, should be the operation of choice, in all cases with a free common duct, or where it is possible to remove a stone in this locality.

With occlusion of the cystic duct this may be done just as easily and with just as certain promise of a cure, and is probably better than incising the duct and removing the stone. Suture of the cystic duct or of the common duct has never appealed to me. It is unnecessary, lengthens the operation, and one gains nothing by so doing.

If the common duct is occluded and the possibility of making it patent not feasible, then cholecystenterostomy is the operation of choice and preferably the anastomosis should be with the duodenum.

We should bear in mind that we are dealing with an infected organ or tissues, and for that reason I would, without some contraindication, advocate treatment along the same lines as we apply to that other useless, dangerous and troublesome structure, the appendix vermiformis.

LITERATURE.

Courvoisier; Naunyn; Brockbank; Robson; Kehr; Pratt, *American Journal of the Medical Sciences*, November, 1901.

—The Baden Homeopathic Association recently requested the government to establish chairs of homeopathic medicine in the universities of the Grand Duchy. When the matter was laid before the medical faculties of the universities of Heidelberg and Freiburg, they objected strongly to the innovation. The Senate agreed with the stand taken, and the government consequently notified the Homeopathic Association that it could not grant their request, nor would it permit the practice of homeopathy in hospitals used for medical education.

AMERICAN CONGRESS OF TUBERCULOSIS.

THE enclosed resolutions were adopted at the recent session of the American Congress of Tuberculosis.

1. Proposed by Dr. W. Oldright, delegate for the Government of Ontario to the Congress:

That, whereas in the lists of deaths from tuberculosis classified according to occupations published in the statistical reports of the United States and Canada, female school teachers hold a very prominent position, this Congress would draw attention to the fact that the average amount of air space in schools is less than half that recommended by sanitarians all over the world, and would further urge upon the authorities their bounden duty of providing more accommodation and better ventilation.

2. Resolutions submitted by the Committee on Resolutions:

Whereas, tuberculosis is an infectious disease, ordinarily communicated from person to person by means of the dried sputum of a consumptive patient, and

Whereas the spread of tuberculosis could be largely controlled by proper care of such sputum and the enforcement of comparatively simple measures, therefore

Be it *Resolved* by the American Congress of Tuberculosis that the health authorities be urged to disseminate to the widest extent possible, through the public press and otherwise, correct information as to the manner in which this disease is produced, and the means employed for its prevention.

Resolved, That we believe it to be the duty of the national, state and municipal governments to enact rational methods for the prevention of tuberculosis, and we recommend the establishment of institutions for the care of indigent consumptives.

Resolved, That there should be state and municipal supervision of all public conveyances used for the transportation of passengers; and in view of the fact that spitting on the floors of public conveyances favors the spread of tuberculosis and is injurious to the public health, it is recommended that transportation companies be induced to pass and enforce rules against this act.

Resolved, That appropriations should be requested from state and municipal governments for the publication and distribution of literature as a means of education in the prevention of the spread of tuberculosis.

Resolved, That all cases of tuberculosis should be reported by the attending physician to the health boards for the purpose of disinfection of houses occupied by consumptives.

At a meeting of the American Congress of Tuberculosis held June 3d, a reorganization was effected and Dr. Daniel Lewis elected president and Dr. George Brown of Atlanta, Ga., secretary. It was proposed to hold a World's Congress in St. Louis in 1904.

Dr. Selden H. Talcott for twenty-five years Superintendent of the Middletown State Hospital for the Insane, died on June 16th at the age of sixty. He was born in Rome, N. Y., July 17, 1842, entered the Army in 1864, serving until the close of the war as an engineer. He was the first Chief of Staff of the Wards Island Hospital and in 1877 was appointed to the position which he held until his death. Dr. Talcott had several times made trips abroad to study asylum management and was considered an authority on this subject. As an alienist Dr. Talcott stood high. In our last issue we published an account of the dinner which was given Dr. Talcott at the Waldorf-Astoria to commemorate his twenty-five years' service.

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NEW YORK, AUGUST, 1902.

THOUGHTS that great hearts once bröke for, we
Breathe cheaply in the common air.

—*Lowell.*

STATUS OF THE PROFESSION.

THE present condition of the medical profession, from an ethical and professional point of view, is both serious and alarming. The morals are constantly becoming lower, and commercialism predominates. The editor has to be incessantly on the alert to discover irregularities which would lead to degradation, even in the original department. The methods of the fittest to survive, are even open to suspicion, and there is little hope for the young practitioner, unless he follows in the footsteps of his seniors. Brilliant success in treatment, and rapid money-getting, are the uppermost elements in the ambitious society practitioner of the day, and the young man must keep pace, or he will not be able to even remain in line. The times have changed, and with them the practice of medicine.

It is no longer the thing to practice medicine for the sake of humanity and an honorable living, as it was once, but the chief ends are fame and luxury. Medicine has become a trade in many circles, and in some instances full of commercialism.

Dr. Thomas J. Hillis recently read a paper before the County Medical Society on "Medical Etiquette at the Dispensary Clinic," in which he admirably voices our sentiments, when he says that once the spirit of tolerance and the cultivation of a kindly professional relation were hardly second to being skilled in the profession itself. This spirit of good-fellowship and consideration for the infirmities and shortcomings of their fellows (now fast dying out) has buoyed up and furnished the motive power that has carried our beloved profession with safety through stormy and trying times, while other crafts and callings were disappearing lights on the horizon of the ages.

"In our time the science of medicine has moved with rapid stride in the direction of higher development, jumping with phenomenal celerity from one grand discovery to another until now, the opening of the twentieth century, the wildest dreams of the fathers are more than realized. While, however, the science of medicine has so far advanced, the etiquette of olden times has not kept pace. It has lagged behind, perhaps scared at the amazing discoveries the microscope and X-rays have made, or perhaps want of confidence in the latter-day physician, who should be its natural guardian and protector, has rendered it diffident and shy. However this may be, certainly it is not the constant companion of the modern physician in his ceaseless rounds of professional activity. This laurel wreath which old-time physicians wore with pride is now withered in an atmosphere of twentieth-century commercialism, unseen but felt on every hand. Fading in the distance, like a landscape the traveler leaves behind, medical etiquette is disappearing from the modern dispensary clinic, and, pray, who or what has taken its place? From inference we are led to believe it is some ugly thing—a monster belching pestilence and death from a hideous mouth. Not that. Oh, no! but a gentleman with an am-glad-to-see-you smile, smooth in manner and dress, with a dagger up his sleeve, prepared to use it on a professional brother if he run counter to his business interests, however unconsciously.

"The race for gold is on and, not without reluctance it must be admitted, the members of the medical profession are not laggards in that race. We can see them now, without any stretch of imagination, tumbling over each other in hot pursuit of the almighty dollar. The suave and polished physician of upper Fifth Avenue is as fleet of foot in the race as is the brand-new doctor who came to the lower East Side two weeks ago. Inspired by the same motive and moved by a common impulse, those brothers in physic have gained on and are now rapidly outrunning the auctioneer and the pawnbroker, men who always have had reputations enviable for sharp practice and alertness in turning a dollar. At present the great bulk of practitioners in New York could easily dispense with medical etiquette altogether, and they would, did they not find it convenient to hide behind once in a while when overtaken by calamity."

Dr. Hillis promises at some future time to throw a searchlight on the dark corners of medical practice in circles high and low, and we hope he will, as he has already done yeoman service in this direction.

There are too many medical promoters for the good of the profession. They are constantly in evidence with their "original articles, in the interest of some new preparation which may be meritorious or not, for which they charge big fees and guarantee publication. One has to be constantly on the lookout for the "nigger" in the literature of to-day. Much of this work is worse than useless, because it is either untrue or misleading. It is with pity that we see a bright young man take up such labor, and this is the kind which is sought, for commercialism has no use for any other. The recent graduate should be cautioned against these pitfalls, and he

should be encouraged to toil and await the results. There is a fascination about work to the true seeker after truth and scientific attainment. It is best that one sticks to his practice rather than to try to eke out an existence by other means, and not attempt to establish a specialty without thorough experience in general practice.

We need a revival of the good old times when men worked more for the weal of humanity than for their own pockets. There has been too much said about physicians not being good business men; it has encouraged the spirit of commercialism and money-getting, at the expense of the higher elements in the profession.

There is much that might be said in criticism of the methods employed by some specialists, but we will leave this for another opportunity, as it would be too long for present purposes.

The dignity of the profession is in grave danger from the present status of professional conduct.

What we need is a reorganization of the profession upon higher ethical grounds and upon true Catholic unsectarian principles. Upon grounds where all can stand with unobstructed view, and medical politics be relegated to the background.

CHRISTIAN SCIENCE.

THE statement is made by a prominent Christian Science lecturer that the comparatively new sect founded by Mrs. Eddy some thirty years ago has increased to such an unparalleled extent that it now claims to have made no less than two million cures. Of course, no mention is made of the failures, and but little information given as to the nature of the diseases cured. Christian Science has been practiced to a certain extent in the exercise of faith, in the dominating power of mind over matter since the time of Christ. It has formed an important part of the repertory of every intelligent physician, and the faith of the patient in his skill and his hygienic instructions are often more effectual and trustworthy than the use of drugs. It has remained for Mrs. Eddy to surround these truths, recognized by all, with a web of false logic and glamour of piety which include in their application every disease and every abnormal condition which can be developed in the human economy. According to this new philosophy there is no such thing as pain. No medication is required, no prescription, no heeding the dietary rules, no self-denial. You can, contrary to the divine precept, against serving God and mammon, be pious and worldly at the same time, and recklessly violate the laws of health without fear of subsequent illness.

A convenient doctrne, to say the least, if true! "There is no sin, there is no evil," and the millennium has come!

To the great number of people interested in the propagation of Christian Science it certainly proves quite profitable as shown by the large fees, "payable in advance," charged by these C.S. Drs. for cure performed or otherwise. This, however, does not prove anything for its truth or therapeutic value. Any fad or cult, however absurd to the scientist, can boast of its successes. Nature sometimes heals herself without drugs, and this fact is utilized by the pseudo miracle worker. The patient's faith will do the rest.

The cures made at Lourdes are facts admitted by Charcot and Bernheim, the heads of the two antagonistic schools of Salpêtrière and Nancy. In an essay on the power of faith, Charcot tried to prove that modern shrines but repeated the phenomena transmitted to us from the temples of Seraphis and Asculapius, and after investigating these cures claimed they were due to hysteria, but incorporated in his therapeutics all he found useful in them.

There are, no doubt, a great number of diseases that will best yield to psychic treatment, and where some celebrated authority can do more than the family physician, and a quack reputed for his miraculous cures even more. The suggestion—that is, the implanting in the patient's mind the firm conviction of a certain success—may here effect a cure that otherwise could not be obtained through the most tested remedies.

A large field for the application of the faith cure is in the first place offered by all those imaginary ailments which are generally attributed to hypochrondria and hysteria. These are diseases in which no organic change of the respective part of the body is involved, though they by no means need be due to simulation. After trying every kind of treatment, the aid of the neurologist is finally recurred to, who, recognizing the real cause of the disease, will succeed when all others failed. His word of command removes as by magic all obstacles; for he has aroused the patient's faith in his treatment and this sudden mental revolution reëstablishes the interrupted nervous current between the brain and the unserviceable limb. The mental revolution accomplished here in the patient's mind by the experienced physician, the Christian Scientist may accomplish with his talk on the divine mind and the unreality of disease. The essential factor to which alone the cure can be attributed is in both cases the same—the patient's faith and the power of the mind over the body.

Not to the imaginary diseases, but much related to them, may be reckoned a series of disturbances in the region of the motory and sensory nervous system, manifesting in the form of muscular paralysis and convulsions, of fits of pain, or insensibility, that are not exactly due to anatomical changes. They are frequently observed with the hysterical and often resist all medical treatment. These are not rarely cured by means of psychic influence, and offer a good field for the exercise of the faith cure.

There are, finally, local as well as general diseases in the form of chronic debility, due to the unconscious functioning of the organs uncontrolled by the impulses of the will. To these organs belong the heart, the vascular system in general, as well as the lungs, the digestive apparatus with its glands, also the organs of urinal

secretion. If these disturbances are of an essentially nervous origin, and not due to advanced organic changes, they are also accessible to the faith cure, but differential diagnosis is absolutely necessary.

The effect of the emotions upon the organism is well known. We blush when hearing a word that offends our sense of decency, because the idea associated with this word causes the brain to exercise a nervous stimulus upon the blood vessels of our cheeks, through which they become enlarged and congested with blood. In fear, the brain causes them to contract so as to make us grow pale. Terror makes us tremble and even deprives us of speech; a joyous announcement accelerates the heart's beating; sad tidings set our lachrymal glands at work and cause us to weep; and the thought of an appetizing meal makes the mouth water because of the increased action of the salivary glands. These and other phenomena are all reactions of mental processes in the brain transmitted by the nerves to the body, which are not consciously induced by the will.

But mental pictures are also capable of producing decidedly morbid conditions in the organs of the body. Investigation has demonstrated the fact that violent emotions not only check the secretion of the gastric juice but also alter its composition and cause indigestion and spasms in the stomach, and will so poison the milk of a nursing mother as to give convulsions to her child. They are also liable to produce vomiting as well as other evil results, such as jaundice through the overflow of bile into the blood. That terror may cause paralysis is a well-known fact. It is therefore reasonable to assume that mental pictures, in particular the faith in a certain treatment, may prevent or cure such disturbances, also sometimes serious diseases. "Faith is the substance of things hoped for" and therefore the very opposite of depressing emotions. Every physician can recall cases where a fatal termination has resulted, not from any organic disease, but from a wish to die so strong as to counteract all the effects of the most skilful treatment, and, on the contrary, the will power of the patient and the determination to live have overcome the power of death even when the patient was almost within its grasp. It is stated of Douglas Jerrold that when informed by his physician that he had but a few hours to live, he whispered: "I cannot die! What will become of my wife and children?" Then his voice rang out like a trumpet: "I will not die!" and in the death struggle his will prevailed and he did not die.

Novelists have certainly pictured from life the cure by love victorious over the wasting disease of hope deferred. Who has not had occasion to observe the wonderful effect produced upon some patient by a specialist, or celebrated medical authority, who is no magician after all, and sometimes can do no more than the average physician whose diagnosis and medication he simply indorses. Yet as a rule he accomplishes more in proportion to the size of the fee received. The patient, believing in the specialist's higher knowledge, has the hope of a speedy recovery, and this stimulates his nervous system and drives away all depressing thoughts, weakness and pain.

These successes which Christian Science as a faith cure has in common with every kind of fad, are, however, overbalanced by disadvantages and dangers little realized by the general public. Even as there are imaginary diseases, there are also imaginary cures by which the believers are duped. The stronger the desire to be cured, the stronger will be the faith, and with failure the more painful the relapse into the former suffering.

Christian Science could hardly be applied to children where there is more confidence in the mother than theories of faith, nor to the multitudes of people still in possession of their reasoning faculties who cannot believe in the efficacy of Mrs. Eddy's therapeutics. As to dangers they are direct, as inadequate and perilous treatments are employed; indirect, through the neglect of recourse to the physician's aid while the disease might still be cured.

But there is in Christian Science one special feature which makes it even more dangerous than any other form of charlatanism, *viz.*, its negation of pain. Pain, in most cases, is the alarm call of Nature, indicating a grave disturbance of health. Unheeding it, the patient may lose his health and his life.

ALCOHOLISM.

TEMPERANCE advocates, in their pursuit of an otherwise very praiseworthy object, are liable to over-shoot the mark by exaggerating the evils resulting from the indulgence in alcoholic drinks. As they claim their statements to be based upon physiological facts, it may not be out of place to examine in how far physiologists agree with those statements.

That the moral effects of alcoholic drinks are very evil is a recognized fact which no one will deny; but as to the results to the physical system the statements of the temperance fanatics are greatly exaggerated.

Physiologists allow the ardent temperance reformers just this: that alcohol, though the effects vary greatly with the individual, is not necessary food, that many are better without it altogether, and that large quantities are always hurtful. They say, too, that the tonic effects are always temporary, and often overrated; but they entirely deny that alcohol is in the cant phrase a "poison." It becomes that only when abused, and our most necessary foods would be nearly as dangerous if the same temptation to excess existed in their case.

A favorite argument against the use of alcohol is that it is not used by the system. This argument, however, is based upon eroneous physiological observation. Early experiments made in the sixties went to show that alcohol was given off the body in an unchanged condition, influenced by no organ, benefiting no part; but later experiments made in England and Germany proved that 93 or 94 per cent. of any moderate quantity of alcohol was certainly utilized. Mr. Atwater in his latest tests successfully accounted for all but two per cent. of the alcohol consumed by his subjects. From these experi-

ments we find that the energy of alcohol is able to replace that of other "fuel" foods. It was also established that small quantities of stimulant do not increase heat radiation to an appreciable extent, so that its energy does not, as many suppose, go to supply a deficiency created by itself, but is actually "used" in the system. These tests, however, are only concerned with the immediate effects of small doses, and take no count of the moral aspect, or the effect on the general health of its continued use.

Probably the only cause of, and also excuse for, the use of fermented drinks is the pleasure, the simple forgetfulness of all troubles of life, they procure. In fact, wine and alcohol produce a particular psychic state in which everything appears to the drinker in the rosiest colors. Sadness, grief, misery, everything, is forgotten. The shore with its distressing human realities has disappeared, and the drinker floats in a sea of oblivion.

This temporary pleasure must, however, be dearly paid for. True, sad reality is far away, but in its stead there arise deceptive, often terrible phantoms, productive of fears without motive, of terrors without name, of murder and suicide. The alcoholic is now surrounded by the imaginary world of his own creation, haunted and tormented by the monsters of his own imagination. He sees all kinds of hideous animals, hears terrifying noises, gets irritated and scared by insulting and threatening voices. These nallucinations rapidly and incessantly replace one another so that the unfortunate subject of delirium tremens is constantly the prey of a horrible nightmare. True, delirium tremens may sometimes be accompanied by visions of a pleasant nature, but these are only rare exceptions, and as a rule the terrifying hallucinations predominate. However it be, we can see that the use of alcohol, though the source of agreeable sensations in the beginning, sooner or later leads to a morbid state of the mind, in which the vague revery or happy quietude sought for by the drinker are soon replaced by the most horrible tormenting hallucinations.

From all these facts the only conclusion to be drawn is: While small quantities of alcohol may not prove injurious to health, it is safer to abstain entirely from its use as a beverage.

THE TWO-YEAR MEDICAL COURSE.

SOME investigations carried on under the auspices of the American Academy of Medicine, show a tendency to return to a two-year medical course —with a difference from that under which most of the older practitioners of the country graduated. The present four-year medical course is pretty sharply divisible into two parts of equal length, the former being devoted to technical, scientific, biologic studies, and the latter into clinical and didactic instruction in practical branches of medicine. With the exception of human anatomy in its details, and certain application of chemistry and microscopy, the first two years of the present medical course are of almost equal interest to biologists and to medical students. Moreover, such branches are, on the whole, more thoroughly taught by trained and permanent students than by medical men who are making the so-called preliminary branches a stepping stone to more technical, medical work. Few medical schools are able to support such teachers and, in the case of a university, it is a wise economy to unite laboratories so far as possible. Certain universities have established special departments, bearing to the college, the close relation of the departments of engineering and intended for the special training of medical and biological students. From these departments, the medical student enters the medical department proper for the completion of the latter half of the medical course. While most departments of a university are preferably maintained in a small town, both for reasons of institutional and personal economy and certain advantages of society and discipline, the practical part of a medical course necessitates the maintenance of hospitals and dispensaries in a large city, and the presence of practical physicians and surgeons—including specialists—who can scarcely be found in a small town.

The advantages of this method of medical instruction in two institutions are already manifest while the insistance upon at least part of the college course as a prerequisite to medical matriculation must be looked upon as imminent and already adopted by several leading institutions, in advance of legal requirement.

The great advances made in medicine in the last few years may suggest the impossibility of adequately teaching the practical branches in two years, even upon a foundation of a liberal education and a technical training in the biologic sciences. To a certain degree, it is true that no limit of time in medical instruction can be regarded as satisfactory, but we must recognize as futile any attempt to graduate a perfect physician. Every physician must be first born, then made, then developed, if he realizes the ideal. No school nor licensing board can do more than place the physician on a plane on which he may, with reasonable safety, begin the period of development which must be continued throughout his life.

To a very large degree, the advances in matriculation requirement as well as in practical medical knowledge, tend to simplify rather than increase the difficulties of medical training. The medical vocabulary, a source of confusion and difficulty to the former, unprepared student, is self-explanatory to the modern matriculant at a medical school of high standard. Definite knowledge in any branch is always easier to acquire than theories, which may be conflicting, and each new discovery serves to render less hazy the teaching of various points formerly not susceptible of association. Better knowledge of physiology, organic chemistry, histology and formal pathology and bacteriology simplifies the whole study of disease, whether from the medical or surgical standpoint. Thirty years ago, each disease was a separate, unrelated entity. The student now has to study the action of the same bacterium on various organs, or of different bacteria producing practically identical changes in the same

organ or, in general, combinations of well-understood general factors, modified by equally definite circumstances of local peculiarity of an organ or apparatus.

The time formerly devoted to such metaphysical matters as temperament, diathesis, cachexia, etc., is now reduced to the brief consideration of a few general principles. Diagnosis. instead of being the collection of arbitrary and uncomprehended symptoms, has been reduced largely to the collating of tangible evidence. The student no longer has to trouble himself with the niceties of discrimination between diphtheria and membranous laryngitis, nor among the puzzling kinds of phthisis of prebacillary times. Malaria has become much simplified, surgical indications and methods have been systematized, in accordance with general principles, peritonitis has become a logical, secondary disease, instead of a mysterious primary one; the tongue is no longer an arbitrary index of gastro-enteric disorders, but an organ with inflammations of its own and participating, to some degree, with similar lesions below. The physiology and pathology of the suprarenal bodies, thyroid and liver and pancreas, are quite well understood, and it is probable that the spleen and pituitary will soon be fairly within our understanding.

All things considered, it must be conceded that without attempting to surpass present standards, the ideal method is to require of the medical matriculant, a college course which shall include the scientific branches of medicine and to make the medical school an institution for training in surgery, practice, obstetrics, gynecology, therapeutics, and the rudiments of specialities. Such a medical school could graduate in two years men at least as well prepared as the average in states which have passed the most stringent laws to control medical practice.

PREVENTION OF TUBERCULOSIS IN CUBA.

PRIOR to the departure of the United States officials from Cuba (as we learn from an article in *Charities*), active measures looking toward the diminution of tuberculosis in Havana had been taken by Major W. C. Gorgas, surgeon in our army, who was the chief sanitary officer of that city. Up to the end of March, 1,642 tuberculous patients had been located within the city limits, and their names and addresses recorded and arranged for easy reference. It was estimated that there were fully 2,700 cases of the disease in Havana at that time. It was the chief factor in the death-rate.

Information as to the nature and cure of the disease was spread among the population by lectures and printed matter, and Major Gorgas was pushing a scheme for the establishment of a public sanatorium to be located in Havana. This plan had received the support of General Wood. The sanatorium was to be divided into two sections. Of these, one devoted to incurables, will be located on the outskirts of the city, while the other will receive patients in whom the disease appears curable, and will be situated about five miles out in the country. Negotiations were under way for the purchase of a hundred acres of land as the site selected for the latter, and work will be pushed as soon as a title can be secured. The sanatorium will be supported by the Cuban Government, and will be entirely free to those unable to pay their way, with the idea of getting as many as possible of the infected poor out of the crowded tenement-houses—particularly the bed-ridden poor, who are a great source of infection under present conditions. The establishment of the projected sanatorium is expected to be of great assistance in diminishing tuberculosis, though the sanitary department placed its chief dependence in securing this result in urging an improvement in the home care of patients with tuberculosis, and in the constant teaching of patients and their friends the simple sanitary measures that will so certainly prevent the spread of the disease to those about the patient.

PHYSICIANS' INVESTMENTS.

IN general, it may be said that productive, not vacant, real estate and first mortgages thereon are almost the only safe investment for one who is not a shrewd business man. The ownership of real estate involves almost constant care, and between the unreasonable demands of tenants and the omnipresent dead beat, with whom the physician is already sufficiently acquainted, the resulting profit is reduced to a low rate of interest, not counting the trouble and time devoted to the investment.

It is not so much the purpose of this article to call attention to desirable modes of investment as to throw out a warning against certain that are undesirable. The physician's mail frequently contains circulars asking him to take stock in gold mines, other mines, manufactories of roller bearings, improved coffins, and all sorts of other appliances. The great trouble with stock of any kind is, that its value depends entirely upon the sagacity and honesty of some one over whom the ordinary investor has no control. Most such investments imply liabilities far in excess of the original investment. It is not in human nature to make money for a stranger, and thus, if any of these enterprises become particularly prosperous, there is likely to be an artificial reduction of value to compel the small investor to sell out at a nominal price to those controlling the business or, in one way or another, the business will be turned over to another company or reorganized, to prevent the outsider from getting his share of the profits. On the other hand, the latter always enjoys his full rights if there are losses to divide.

Another favorite scheme is, coöperative investment in some form of wholesale drug business, including sanitaria and mineral waters. Many such enterprizes are perfectly honest, and, if properly managed, with sufficient initial capital, they should be successful. Every little while the physician is appealed to, to take stock in some proprietary medicine, on the ground that he has a

"sure thing" because he can increase the sales by prescribing. The most ambitious scheme of the kind that we have happened to see is a recent one in which each coöperator has a voice as to the make-up of the formulæ. By such a plan as this, every humble physician with a few dollars to spare may hope to become a Pierce or Lydia E. Pinkham. While it would be going rather far to say that a physician should never be an investor in a drug, mineral water or other appliance which he may at some time prescribe, he certainly ought not to be directly concerned in the choice of medicines for his patient in any way except the professional one for which he is employed. Aside from the ethical consideration, any tendency toward a fixed formulary ought to be deprecated, as the best therapeutics is that which prescribes independently for each patient, and the less compounding there is of different drugs in a single prescription, the better.

Another general warning with regard to investments is to avoid anything too remote or with which one is unfamiliar. Distance often lends enchantment to an investment, but seldom any material benefit, and no investment should be beyond the reach of occasional personal inspection. A farm, leased or worked on shares, may be a paying investment to a physician located in a neighboring village, who can use some of its products in his own kitchen and stable, but it rarely pays over two or three per cent. to a city resident who has no knowledge of farming. On the other hand, city real estate is liable to prove a burden to one not familiar with local conditions, as many of our readers can testify.

Where there is enough professional cohesion and not too much of an attempt at business coöperation, medical and dental office buildings should be a paying investment in any large city, provided that the initial expense is not too large.

A general rule for all investors is to ask if an investment represents a genuine value, available to prospective users. Everything of the nature of a "graft" is liable to prove a dead loss to any but the shrewdest and most unscrupulous manager. An investment which implies loss to the user, ought to prove unprofitable, and the investor who relies on the disinterestedness of a promotor in deceiving the public, need expect no sympathy if he is himself deceived.

Adequate insurance against the financial loss of death, fire, disability, etc., is always a good investment, but no insurance can be expected to pay large interest aside from its protective value. Often, the wisest investment is a direct expense for professional equipment, self-education, and reasonable recreation.

Dr. John Newell Tilden, a distinguished physician and educator, died at his late residence in Peekskill, N. Y., Thursday, July 10th, of disease of the heart. Dr. Tilden was a graduate of the Syracuse University and of the Long Island College Hospital. After the close of the Civil War, in which he served as surgeon, he commenced the practice of his profession in Peekskill, where he soon gained an enviable reputation as an original thinker and a skilful practitioner. The latter portion of his life he had charge for several years of the Peekskill Military Academy. Dr. Tilden leaves a widow and one son.

—Of all the countries in the world, it is Servia which contains the most centenarians. Among its 1,300,000 inhabitants there are 575 whose age exceeds 100 years.

BIBLIOGRAPHICAL.

TEXT-BOOK OF PHYSIOLOGICAL AND PATHOLOGICAL CHEMISTRY. By G. Bunge, Professor of Physiological Chemistry at Bâle. Second English edition. Translated from the fourth German edition by Florence A. Stanling and edited by Ernest H. Stanling, M.D., F.R.S., Professor of Physiology in University College, London. Price $3.00 net. Published by P. Blakiston's Son & Co., 1012 Walnut St.

This is a text-book which embraces a series of practical lectures which represent the ideas which are produced throughout many years' discoveries of fundamental importance and which have proved of the greatest scientific value. Aside from the eminently scientific and practical value of these lectures in themselves, they have also the merit of having been written by a man who is philosopher, mathematician and chemist of the highest standing before he was a physiologist, and who, being thus in position to grasp the general and specific bearings of this subject, has succeeded in making the dry bones of physiological and pathological chemistry exceptionally interesting.

PRACTICAL MEDICAL SERIES OF YEAR BOOKS. Comprising ten volumes on the Year's Progress in Medicine and Surgery. Issued monthly. Vol. VI., General Medicine, May, 1902. Edited by Frank Billings, M.S., M.D., with a collaboration of S. J. Stanton, M.D.

The articles in this volume of Typhoid Fever, Yellow Fever, Malaria and the Diseases of the Gastro-Intestinal Tract, including Dysentery, Diseases of the Pancreas, Gall-stones and Diseases of the Biliary Ducts which have been so fully discussed in the journalistic literature of the past year, present the most recent views of the best men on the subjects, and show the more exact knowledge which recent discoveries afford us. We notice, too, the important part which American physicians have taken in the medical discoveries of recent times, especially in respect to the transmission of yellow fever, the affirmation of the bacterial cause of dysentery and the relation of gall-stones and cholangitis to pancreatic disease.

THE ROLLER BANDAGE. By William Barton Hopkins, M.D., with illustrations. Fifth edition, revised. Published by Lippincott & Co., 1902.

No student in medicine could hardly consider his library complete if it did not contain a copy of this little volume, which teaches not only the principles of bandaging but by illustration the correct application of the bandage wherever it is needed.

A MANUAL OF OTOLOGY. By Gorham Bacon, A.M., M.D., Professor of Otology in Cornell University Medical College, New York. With an introductory chapter by Clarence J. Blake, M.D., Professor of Otology in Harvard Medical School, Boston. New (third) edition. In one handsome 12mo. volume of 437 pages, with 120 engravings and 7 plates in colors and monochrome. Cloth, $2.25 net. Lea Brothers & Co., Publishers, Philadelphia and New York.

Dr. Bacon's work contains in a condensed form the best otological knowledge of America and Europe, presented with excellent judgment and in a manner which

in text and illustration will interest not alone the general practitioner but also the specialist.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, etc. Vol. II. June, 1902. Surgery of the Abdomen, including Hernia, Gynecology, Diseases of the Blood and Ductless Glands, the Hemorrhagic Diseases, Metabolic Diseases, Ophthalmology. Lea Brothers & Co., Philadelphia and New York, 1902.

This is one of the best series of books of its class. It is ably edited, and the writers upon the various subjects are selected with an eye to fitness, so that the very highest class of material is obtained. No one can make any mistake in subscribing to this work.

CLINICAL PSYCHIATRY. A Text-Book for Students and Physicians. Abstracted and adapted from the sixth German edition of Kraepelin's "Lehrbuch der Psychiatrie," by A. Ross Defendorf, M.D., Lecturer in Psychiatry in Yale University. Price $3.50 net. The Macmillan Co., 1902.

The object of this work is to make the teachings of Kraepelin in Psychiatry acessible to Amercan medical students and general practitioners, and at the same time to provide a full yet concise text-book not only for the author's own classes in psychiatry in the medical department of Yale University, but for other American teachers who follow Kraepelin's views. The work is essentially an abbreviation of the sixth edition of Kraepelin's "Lehrbuch der Psychiatrie" with editorial additions which will adapt it to our peculiar American needs. The only omissions are the General Etiology, Diagnosis and Treatment in the first volume of Kraepelin, but such points as are the most important have been added to the etiology, diagnosis and treatment of the different diseases. The work places the invaluable teachings and experience of Kraepelin upon mental diseases within the reach of all, and will prove a most valuable addition to the library not only of the specialist but especially to the general practitioner.

DISEASES OF THE LUNGS. By A. L. Blackwood, M.D., Professor of Physiology and General Medicine in the Hahnemann Medical College, Chicago; Author of Diseases of the Heart. Halsey Bros. & Co., Chicago and St. Paul, 1892.

The author has presented with great clearness the salient points in the etiology, pathology, symptoms, and treatment of diseases of the lungs in a concise and practical manner. Special attention has been devoted to therapeutics, which is from the homeopathic standpoint and embraces the most approved methods of that school. Under differential diagnosis tables have been prepared making the most important points perceptible at a glance. In the present scientific study of diseases of the lungs, the student will find much of value in the careful and well-considered suggestions of the author.

—The returns of the Registrar General of births, marriages, and deaths in England for the year 1900, the first complete year since the war broke out, show a decline in marriages and births and an increase in deaths.

CORRESPONDENCE.

A HOMEOPATH (?) ON SECTARIAN MEDICINE.

Food for thought on the part of all liberal-minded physicians is contained in Dr. A. E. P. Rockwell's article in a recent number of *American Medicine*, entitled "Sectarian Medicine, its Etiology and Treatment." It is the more deserving of notice because some of the author's expressions indicate pretty clearly that he belongs to the homeopathic profession, and is desirous of its continued existence. "The extermination" of homeopathy "as an organic entity," he declares, "is certain, if the present course [*i.e.*, the policy of sectarianism] is persisted in." The true way, in his opinion, of bringing about the medical millennium, is for all legally qualified sectarians to place themselves "in a position analogous to that now enjoyed by the societies embracing the various specialties, namely, affiliative relationship to the great body of general medicine"—a plan which he regards as "not only ethically, scientifically and organically sound, but as well the most just and feasible solution of the problem." With a view to this consummation, "it is imperative that we appreciate the necessity of reciprocity. We should be prepared to relinquish certain things to which we attach importance, and expect concessions in return. If the policy outlined is wisely pursued, the integrity of homeopathy will be preserved, thus guaranteeing, when the time is ripe, continued recognition." As it is, "an intelligent appreciation of the signs of the times discloses the fact that homeopathy organically has begun to decline. Here in America we are neither graduating yearly the same proportion of physicians to the number in practice as formerly, nor so many in proportion as do the dominant schools. And, moreover, the total number graduated by homeopathic schools yearly compares less and less favorably in proportion to the growth of population with the total of its competitors. The magnificent endowments constantly received by the non-sectarian medical schools makes them yearly more attractive to the student than homeopathy. The public is rapidly realizing that the therapeutic gulf is not so wide as of old, and, as a result, seek less and less the services of those members of the profession who adhere inflexibly to a so-called school." The dwindling fraternity is moreover admonished that "the transit from one line of thought to another is gradual, and it is idle to expect homeopathic materia medica to be taught as such in the non-sectarian medical schools. If homeopaths, however, so far as possible, associate themselves with medical societies which have as requirements for admission no conditions conflicting with their own, they will by degrees promote an ever-increasing friendly spirit." And such a spirit, we would add, is all that is needed to ensure the cordial reception by its erstwhile opponents of whatever of basic truth can be demonstrated in the Hahnemannian "system." Dr. Rockwell calls attention to "the fact that those [of his colleagues] who champion this cause along the lines above indicated" have everything to lose, and little, if anything, to gain, save the consciousness of having performed what was conceived a duty. They are likely to lose many friends among those with whom they have been associated and gain but few, at first, from any quarter"—a truth which we can feelingly attest from our personal experience! That homeopathy, as a result of parting with its sectarian character, will not necessarily be completely merged in the general profession, but may occupy the position of a recognized spe-

cialty, is an idea which we have entertained for some time, but which has never before, to our knowledge, been publicly advocated. That it should now be put forward by a homeopath, in an appeal to his fellow homeopaths, strikes us as an unmistakable and most auspicious omen. What Dr. Rockwell refers to as "bias of personal motive or interest" will no doubt continue to influence a sordid remnant long after all honest and thoughtful physicians shall have fully realized that "the best interests of humanity demand a unified medicine," and have acted accordingly. E. N. E.

PROFESSOR W. O. ATWATER AND THE ALCOHOL PROBLEM.

Professors W. O. Atwater and F. G. Benedict, in their experimental work of alcohol upon the human economy, had only one problem in view. What is the physiological effect of mild alcoholic usage upon the body? "Aside from the question of the power of alcohol to protect protein and fat and supply energy to the body for various useful purposes [they say], there are far weightier considerations of the general effect of alcohol upon the muscular and especially the nervous system and upon health and welfare. Upon these most serious hygienic economical and ethical problems the experiments here reported throw no special light."

Again: "There is a very essential difference between the transformation of the potential energy of alcohol into the kinetic energy of heat, or of either internal or external muscular work, and the usefulness or harmfulness of alcohol as a part of ordinary diet. Regarding this latter question the experiments bring no more evidence than they do regarding the influence of alcohol upon the nervous system or its general effect upon health and welfare." With them it was purely an experimental fact in physics with no attempt to throw any light upon its special physiological and psychological reaction upon the body, immediate and remote. Within these limits these experiments are incomparable superior in scientific accuracy to anything ever attempted in this line. Every particle of energy that was in, or put into the body was accounted for in expenditure and storage. It was a prolonged, involved and scientific bookkeeping in the living economy of nature as accurate and systematic as that of a bank. It is an immortal work, the value of which will become better appreciated as time rolls on. Indeed, I believe even they have not fully realized its meaning in the more remote value it will have upon the solution of this complex and interesting problem.

After having made some physiological and psychological experiments upon the human subject, with and without alcohol, to get some accurate knowledge of its effects used in moderation, I was invariably forced to the conclusion that it was not an economical food, that the body could not work so well or the mind concentrate its attention and application with efficiency. That it produced an artificial state of bodily feeling by disturbing the normal functions, and that it was most dangerous because it tended to form a habit; that it was not only a poor food but one the continued and the excessive use was destructive to bodily function. After having heard so much of Prof. Atwater's experiments, I expected to find some evidence in reading them that would show me some of the errors of my study, but I was surprised that they are in entire harmony with them. When one follows the study of nature with scientific care, no matter in what department, be it physics, physiology or psychology; when the journey is completed and the work well done, all will meet and sit around the table of the unity of Nature, the conservation of energy, where each may unfold the wonderful journey, the at times dark and hidden paths through which they traveled, the one illuminating, the experience of the other, and all blended into the ideal architectural unity of Nature.

What do these experiments of Prof. Atwater prove? We will briefly state them here for the benefit of the general reader, as it takes no mean knowledge of physiology and biology to follow them. The experiments were upon three middle-aged, healthy men, with and without alcohol for a diet. The amount of the alcohol energy, which was a trifle more than four ounces of whiskey in twenty-four hours, and given in six doses, was subtracted from the food energy. This was slightly, if at all, appreciated by the subjects. The results of these experiments forced Prof. Atwater to state that: "The law of the conservation of energy obtained with the alcohol diet as with the ordinary. Hence, alcohol is a food. At once all the "reformers" went into the air, hurling blasphemy, invective and incompetency upon the real and true student of nature and truth. But as his work is good it will endure, and live to bless his memory long after his defamers have sunken into oblivion.

Valuable as is this general deduction and conclusion as a physical fact, that alcohol is a food, and about which such a fuss is made, yet it is the least important, consequential, far-reaching and potential influence to be gleaned from them, for, in connection with them, he recorded the physiological and psychological effects as facts in these experiments that are of great value and which it is our purpose here to take in brief review. In these experimental facts we are able to discern, with clearness and accuracy, what it was impossible to appreciate and understand with our ordinary sense. That we may better comprehend their meaning, let us briefly formulate them into a general conclusion, keeping in mind all the time that these are the results of the mildest effects of alcoholic usage.

About two per cent. of the alcohol is given off by the skin and lungs.

Alcohol is "inferior in protein protecting power."

Alcohol protects fats—conserves them.

One accustomed to the use of alcohol protein is protected.

Alcohol gives energy and heat.

Alcohol oxidizes more rapidly (?) than proteids by staying the combustion of the latter.

Alcohol seems to specially influence the nervous system.

There are a great many other interesting and important facts in these experiments with which we will not burden the reader, for a few of the most important carried with us will make it easier to follow and understand their importance and meaning.

Let us summarize what these special facts mean, the germs of which for the first time have been recorded and recognized with physical accuracy in this most primitive and diffuse form, unappreciable to our ordinary senses.

The fact that even such a moderate use of alcohol causes a small per cent. of it to be given off by the lungs and skin is conclusive evidence that it is a very ready, quick and highly oxidizable food. Indeed, that it is so rapid it cannot be completely broken up or oxidized and adjusted by the digesting and assimilating functions and part of it passes into the body, thereby unusually reacting upon the tissues generally, but especially the nervous system, as it is more complex and highly organized, with a specific and specialized functional expression.

That alcohol especially protects fats and is not as conservative as ordinary foods in protecting proteids is not

only true of these experiments but is in harmony with the general principles of our observation and experience, and thus have a worth and value that so far have not been fully appreciated. In them we discern, in the most primitive form, the effects of alcohol which the more common experiences and results demonstrate. It is thus by these experiments it has been made possible to follow the physiological effects of alcohol upon the human economy with acuracy and scientific system. This was impossible without them, and to me appear of such transcendent value, compared with which the conclusion that alcohol is a food sinks into insignificance.

These experiments of Prof. Atwater cause the alcohol problem to appear in its most favorable light, but they point with unerring finger the direction of its drift. It is not an economical food, and injurious to the nervous system. This common experience demonstrates as a result of increased usage. If we put the food value of alcohol in its most unfavorable light by feeding the subject with an alcohol diet exclusively, he would soon be burned up. That alcohol is, in all stages, after all, only a difference of degree of burning. This is an important physiological and biological fact. This does not necessarily mean that alcohol is useless in the living economy under all conditions, for its very effects bring about some of the most useful results. But to know how and when to use it we must first fully understand its physiologcal action, and, understanding it, its continued and excessive use will cause all to hesitate, as it can only cause personal injury.

A large majority of the Christian world believes that the moderate use of alcoholic beverages are conducive to strength, endurance, health and happiness. This being true, of what great value this simple lesson taught to them in all its simplicity and purity would have. Let us not delude ourselves, however, by thinking this is the alcohol problem in a nutshell, for there are others bound up with it, some if which even appear to favor its moderate use. Indeed, we cannot fairly state that the Christian world has wilfully used it to do injury to the body through ignorance of its action, but rather because it produced agreeable states of feeling to give it respite from the routine of life. We still must look these facts in the face, disagreeable as they may appear, but, once understanding them, the possibility of remedying comes within our reach.

The experiments of Prof. Atwater show that alcohol is not a good food. This the daily but coarser experience corroborates with an emphasis about which there is or can be no question. That it is only a difference of degree of its use. Having learned that alcohol is a food, the continued use of which is injurious to bodily strength, health and welfare, even in moderation, then the work of Prof. Atwater cannot be overestimated in value for the production of human good, as this lesson more than any other is the one which the world is so much in need of in this specialty. Having mastered the source, the destructive results will not follow.

It is because alcohol is such a quick food it stimulates the bodily functions to excess for a time, that makes it so seductive. An agent or force that can so modify the established habit of the living economy for a time must of necessity cause a reaction that leaves it below normal, and if its continued use at the same time is also destructive to the bodily functions, but especially the nervous system, the gulf between this artificial state of being and the normal must become ever wider and deeper. This is physics and experience arm in arm.

To prevent we must first understand. Once understanding the strength and weakness of a problem, the direction of prevention suggests itself. As it is the prime function of the study and practice of medicine to elucidate and make clear the physical laws of life, it holds a very important, exalted and responsible position in society, because each new discovery is for the general welfare, not so much in curing diseases but in preventing them. This is the prevailing and all-absorbing trend of its study at the present time. It has learned that disease as well as health is a process in nature. The physician who believes his office is confined to curing diseases is a very benighted and sorry spectacle indeed. The true physician only directs health or towards health when attacked by forces that injure and destroy. To do this successfully he must be an all-round student of the laws of nature, especially those that cause injury to health, so that he can not only intelligently cure, but, what is more important, prevent disturbances from health.

To resist the destructive forces of nature we must first learn how to direct, organize and build up the constructive force into strength and vigor. To know how to build up the healthy organism, we must first understand its forces or laws. We can neither build up nor prevent if we do not understand. As the continued use of even mild alcoholic feeding has been demonstrated to be injurious to the living economy, a lesson of no mean value will have become established in the general body of our experience to direct and guide us. The truths of nature are of such basic value for all true reformation that we court them with all the skill and care it is possible to bring to bear. They are not for the hour but for the ages. A simple truth in nature at first sight may not appear of great value, as when the first microscopic germ life was given to the world, but how it has revolutionized and reorganized it. Rich as has been the nineteenth century in unfolding many of the secrets of nature, the twentieth century will be as proportionably greater. The seed has been sown and the harvest must surely come, among the fruits of which the work of Prof. Atwater will not be the least.

HERMAN GASSER, M.D.

Platteville, Wis., July, 1902.

RETROSPECTIVE THERAPEUTICS.

Deafness as a Prognostic Sign in Typhoid.—A peculiar symptom which was suggested by Professor Trousseau many years ago as being of value in determining the prognosis in typhoid fever is brought to notice by W. C. Doane (*N. Y. Med. Jour.*, Apr. 26, 1902), who has confirmed its significance in many cases. When deafness is present only on one side the prognosis ought to be guarded. For then the patient almost always dies, although the disease at that time may appear very mild. If the deafness occurs on both sides, however, the prognosis is good, for it is said that the disease almost never results fatally when this symptom is present. No explanation of the phenomenon is offered, but its value may be proved by experience.

Kidney and Bladder Diseases in Infancy.—A valuable paper on this subject, by John Lovett Morse (*Annals of Gynecology and Pediatry*, May, 1902), concludes as follows: "My experience leads me to believe, therefore, that diseases of the kidneys and bladder are not at all uncommon in infancy, and that the examination of the urine will render a diagnosis possible in many doubtful cases and throw light on many obscure symptoms. It is not enough to examine the urine only in cases in which diseases of the urinary organs are suggested, because the symptoms of these diseases in in-

fancy are not only almost never characteristic, but usually misleading. It should be examined as a routine procedure, otherwise most of these cases will be missed, and diseases of these organs will continue to be as uncommon in the future as they have been in the past. If it is examined as a routine measure, I feel sure there wil be a very sudden increase in the frequency of these diseases, an increase, however, apparent rather than real."

A Hitherto Undescribed Sign of Incipient Arterio-Sclerosis.—The diagnosis of arterio-sclerosis (*Intern. Med. Mag.*, May, 1902) is based entirely on the physical condition of the aorta and the peripheral vessels. In many instances the symptoms are ill-defined or entirely absent, so that the disease remains latent and unrecognized until it is too late. It is particularly important to recognize atheroma as early as possible in order that treatment may be directed at once against the manifold secondary results that follow degeneration of the arterial tree. Any addition. therefore, to our diagnostic armamentarium must be welcome. Chuchwsky (*Sem. Med.*) has recently published some investigations by which he shows that it is possible to provoke at will a dilatation followed by a contraction of the arch of the aorta in cases where this vessel preserved its normal elasticity. After determining the limits of the arch of the aorta and delineating them with crayon on the chest wall, he percussed the region thus outlined without using a pleximeter, he gave five or ten blows with a mallet that were strong enough to produce a slightly painful sensation. After a short time he again determined the limits of the arch of the aorta, and discovered that it had undergone dilatation.

The author found that it is better to practice percussion from without inwards, *i.e.*, toward the sternum, and that the right border of the aorta reacts best to percussion, so that in most cases the variations of this border should be considered exclusively.

In seeking to determine the effect of these variations sphygmographically, he found that each dilatation provoked by strong percussion corresponded to a marked lowering of the blood wave. The inverse phenomenon, that is, the narrowing of the vessel, may be produced by striking two or three sharp blows on the epigastric fold. If this is done, the sphygmographic tracing is correspondingly modified, *i.e.*, the blood wave rises.

The absence of this phenomenon indicates the existence of atheroma and constitutes an excellent sign of arterio-sclerosis, as the atheromatous process begins in the aortic arch.

Dionin in Mental Disorders.—At a meeting of the Society of Neuropathologists and Psychiatrists at the University of Khosan, Dr. M. M. Meavsky (*Vratch*, XXII., No. 6) spoke of his employment of Dionin, the hydrochlorate of ethyl-morphine, in mentally deranged patients. He used it with very good results in nineteen cases altogether, chiefly those of maniacal excitement. Equally favorable results were obtained in cases of sexual excitement and irritability, with erections. The author says that dionin contracts the congested cerebral blood-vessels, and thus allays the cerebral irritation. It has an excellent curative effect in masturbation, exerting a sedative action and destroying the desire to masturbate. The dose employed was ⅔ to ⅚ grm. hypodermically. In the discussion that followed the reading of the paper, Prof. M. M. Popoff said that the property of dionin to diminish sexual excitement deserves serious consideration, and should this property be confirmed by other investigators, we shall become richer by a very important therapeutic agent.

The Eradication of Scarlet Fever.—Ames (*Phys. and Surg.*, Nov., 1901) gives the following suggestions regarding the eradication of scarlet fever: (1) Every suspected case should be promptly isolated until the diagnosis can be positively confirmed. (2) After confirmation, make isolation absolute, and report the case to the health department. (3) Instruct the family to keep the patient isolated until all signs of peeling have disappeared. (4) All members of the family who desire to leave the house must do so the first day after the clothing has been disinfected. This will take six hours, as all their apparel must be placed in a sealed room and exposed to formaldehyde gas for at least that length of time. To insure public safety, they must remain away until the time of quarantine is over. (5) No person should leave the infected area after 14 days continuous exposure, unless the patient is free from desquamation. (6) The attending physician should have have as little contact as possible with the patient; cleanse his hands thoroughly, and disinfect his clothing before entering another home. (7) The character and duration of the isolation must be left to the health department. Thorough disinfection with formaldehyde, 10 oz. to 1,000 cubic feet, will destroy all germs.

Calcium Sulphide in Diphtheria.—Dr. E. L. Abogado (*Cronica Med. Mex.; Jour. A. M. A.*, Jan. 11, 1902) confirms the efficacy of calcium sulphide in the treatment of diphtheria. It cures mild cases without further medication, and in severe cases proves a most valuable adjuvant to antitoxin treatment. He established its efficacy in 110 cases of complicated diphtheria, in 21 of mild, pure diphtheria, and in 13 severe, pure cases. None of the two last groups died. The sulphide was the only therapeutic agent employed in any of the cases. Its efficacy is probably due to its action on the associated microbes as well as on the diphtheria germs, while antitoxin is powerless against the former. He usually administers ⅙ gr. every hour up to one year of age; ⅙ gr. every half hour between one and three; ⅙ gr. every fifteen minutes between three and five, or 5 gr. during the day. Between five and fifteen, ⅙ or ⅓ gr. every fifteen minutes, or about 8 gr. during the day. Adults should take 10 gr. during the twenty-four hours, suspending the medication whenever the breath exhales the characteristic odor very intensely. He administers about 1 gr. a day in 5 to 6 divided doses as a preventative measure to children exposed to contagion. He considers it a very valuable internal antiseptic and has never known of any untoward effects from its use in this way during six years of experience.

Apomorphine in Hysteria.—Faucher (*Bull. Med. de Quebec*) strongly recommends apomorphine for hysterical attacks. He injects 1-10 gr., and claims that in this way he is able to cut short hysterical attacks and hystero-epilepsy. The vomiting and subsequent depression have a sedative effect on the nervous system. The great advantage of the treatment is the saving in time. The doctor can leave the house within fifteen minutes. Faucher has also used this method in cases of true epilepsy. The paper contains several illustrative cases.

Sarcoma Treated by the Injection Method.—A very interesting case of sarcoma rapidly involving one side of the upper jaw, secondary to an injury and forming metatastic growths on the other side of the neck, is reported as being successfully treated by Coley's method of injection. O. K. Winberg (*Med. Rec.*, May 3, 1902) states that a radical operation had been done, but that the growth was too large to be entirely extirpated. The patient grew rapidly worse and finally became thoroughly jaundiced, pulse 130 to 140, irregular and intermit-

tent, the growth becoming so large that for several days nourishment could not be taken by mouth. In desperation an injection of one-half a minim was begun and gradually increased, although the patient grew worse during the first few days and death was daily expected. Later, a change for the better was noticed and from that time on gradual and decided improvement was seen. Within a month the patient was able to attend professional duties and in four months all evidence of the growth, except the external scars, had disappeared. The tumor was pronounced sarcoma by three physicians who examined it microscopically.

RETROSPECTIVE DIETETICS.

Coffee and Beer in Lithemia.—Sajous (*Mthly. Cyclopedia of Practical Medicine*) has summarized in tabular form and critically considered the results obtained by Dr. A. E. Taylor in a series of observations made on himself with various diets and published in the *American Journal of the Medical Sciences* for August, 1899. These results are most striking and instructive. The output of urea, the normal end-product of nitrogenous metabolism, was greatest during the period of normal mixed diet without coffee or beer—40.752 grams—with the exception of one other period, that when an extra heavy proteid diet was taken. It then reached 59.021 grams; but was distinctly less in the eighth period, when coffee was added without beer—39.225 grams. When both coffee and beer were added in the seventh period, the amount of urea was slightly more—39.935—but still less than under the normal diet without either beverage. Thus, coffee and beer markedly lessened the oxidation of the nitrogen of the food and with the addition of coffee alone it was even worse.

But the two periods in which coffee or coffee and beer both were added to the normal mixed diet showed not only a very large increase of uric acid (worse with coffee alone than with both added), but also a most striking increase of the xanthin bases. These poisonous bodies—which have proved highly toxic to animals and are believed to be the real cause of lithemic symptoms and the various other systemic derangements that have been usually attributed, especially by Haig, to uric acid—were thus in largest quantity when both coffee and beer were taken.

In view of these facts, Boardman Reed (*International Med. Magazine*, April, 1902) is of the opinion that Dr. Taylor's observations manifestly confirm the chemical researches which show that the alkaloids of coffee and tea are closely related to the xanthins, and also bear out clinical experience to the effect that coffee and beer, however agreeable and refreshing as well as apparently safe in moderation for healthy persons, are injurious in lithemic cases.

Borax and Boric Acid as Food Preservatives.—From their study and investigations of this subject, Victor C. Vaughan, M.D., and William H. Veenhoer (*Amer. Med.*, March 15, 1902) draw the following conclusions:

(1) The use of borax and boracic acid as preservatives in butter and cream is justified by both practical results and scientific experimentation. One-eighth of one per cent. of borax or boric acid delays the souring of cream at ordinary room temperature for about twenty-four hours, and when the preservative is increased to 0.25 per cent., another day elapses before souring takes place, and 0.5 per cent. will further delay the souring. (2) The dusting of the surfaces of hams and bacon which are to be transported long distances, with borax or boric acid, not exceeding 1.5 per cent. of the weight of the meat, is effective and not objectionable from a sanitary standpoint. (3) Meat thus dusted does not become slimy, because the preservative prevents the growth of aerobic peptonizing microorganisms.

Diet in Bright's Disease.—Dr. William Hale White says: "Much has been written about the diet in chronic Bright's disease, and frequently the importance of it has been much exaggerated. The dietary for Bright's disease has even been fastidiously determined by the color of the meat ordered. If any method at all underlies many of the dietetic directions given to patients with Bright's disease, it is that those who order the diets try, by means of dieting, to diminish the risk of uremia. But we have no certain knowledge what is the poison which leads to uremia, and therefore we can hardly hope to influence it by diet, and, indeed, there is no series of cases published showing that any particular diet is more likely than others to lead to uremia. The great guiding principle in dieting patients with chronic Bright's disease is that, as we do not know what is the cause of uremia, the best way to avoid it is to give such diet was will best maintain the patient's general health.

Modification of Breast-milk by Diet and Hygiene.—Many physicians as well as mothers are willing to substitute modified cow's milk for mother's milk, even when only slight obstacles seem to make feeding from the breast difficult. No doubt the larger part of the responsibility for this unfortunate change rests at the door of the physician who does not sufficiently impress the mother with the dangers which are sure to arise. T. S. Southworth (*Med. Rec.*, April 26, 1902; *Med. News*) believes that with persistence and careful attention to the regulation of the mother's food and her mode of life, the ordinary difficult problems may be overcome. An analysis of the breast-milk will oftentimes at once suggest the proper method to be pursued. He cites several instances in which, after several weeks of fruitless endeavors by the family to make a child thrive upon breast-milk, he has so regulated the mother's food, exercise and bodily functions, and so trained the child in the regularity of its feeding, that after a few days of worriment and uneasiness the final results have been most satisfactory. The danger during the summer to bottle-fed babies is so great that every endeavor should be made to give them the advantage of mother's milk.

Beef-juice in Infant Feeding.—Respecting the alleged evils from feeding beef-juice preparations to children during infancy, the *Medical News*, May 31, 1902, says: "There is good reason to think that during the period of literal infancy, that is, the non-speaking first two years, beef-juice is not to be employed as a regular article of diet, unless especially indicated. There seems to be no doubt, however, that at times its employment is not only justifiable, but entirely in accord with rational thought in the etiological treatment of infantile affections. . . . Needless to say, the properly expressed juice of meat is a precious concentrated, yet readily digestible, food. To speak of meat-juice as beef-cocktail is to misapprehend entirely its nutritive significance and to mistake its chemical contents. Properly prepared beef-juice is stimulant, but this effect is of secondary importance compared to its positive nutritive value. To confound beef-extract and beef-juice is to make a serious error. To condemn one because of the other is to deprive the physician of a very important practical auxiliary in the treatment of exhausted conditions, no matter whence derived and whether occur-

ring in adults or in children. . . . Beef-juice is not a remedy for every disturbance of nutritive metabolism in the child; it is, however, a very precious accessory to other natural and drug methods of treatment, and its indications and limitations should be studied further. Its value will repay the investigators."

The Dietetic Treatment of Measles.—L. Fisher (*Med. Rec.*, April 12, 1902) says that if a nursling is affected, breast-milk is the only form of diet. If a bottle baby is affected, the greatest care must be exercised in the feeding, owing to the subnormal condition of its stomach. The moment gastric symptoms, such as vomiting or diarrhea or anorexia, are marked, a greater interval between the feeding periods should be given. Also, a smaller quantity of food should be administered. If, for example, an infant, while in health, receives a six-ounce bottle of milk, it is wise to give but four ounces, or even three ounces, according to its appetite.

When, in spite of all precautions, violent gastric symptoms prevail, absolute rest of the stomach must be enjoined. In the interim, rectal feeding may be necessary to sustain life until the gastric irritability has passed away. In older children, who have taken milk for thirst, buttermilk may be substituted with advantage. Buttermilk has a very laxative effect; it will also quench thirst and is very nutritious. Concentrated food, such as cream and butter, owing to their nutritious character, should be administered. Thus a small quantity of cream rather than a large quantity of milk, if the stomach will tolerate it, will be beneficial. Soups, broths, eggs and paps of oatmeal and farina and milk, are indicated. In older children, calf's foot jelly, chicken jelly, raw scraped steak and oysters, in addition to broths and milk and cream, may be allowed. Fruit and fruit juices may be given *ad libitum*.

The convalescence of the patient, and the restoration of the body to its normal state, will depend on the nutrition rather than on the amount of drugs poured into the body. Subnormal conditions must be restored to the normal. Insist on feeding by mouth if possible, per rectum when necessary, and then, and then only, can we hope for the resolution of what the author considers one of the most dangerous of infantile diseases.

THE CLINIC.

SIGNIFICANT SYMPTOMS IN TYPHOID FEVER.

It is very common to find in typhoid fever that the pupils of the eyes are enlarged. This was one of the first contrasts which made the diagnosis between typhus and typhoid fever. It is a well known medical fact that in typhus fever the pupil is small, while in typhoid fever it is dilated. Generally there is some sensitiveness to light also; the patient instinctively avoids all high lights and reports that they increase his headache.

Significant Little Symptoms.—There is a look of depression about a typhoid patient which is curiously characteristic. His face shows an expression of languor and of drooping about the mouth; he no longer holds his lips firmly together, and the lower lip may hang down. He has dark rings under his eyes, and there is generally a little flush to his face. If you look at him closely you will notice that despite the fact of his lying in bed that there is a little increase in the speed of his breathing. An increase in the breath-rate is always suspicious of high temperautre. Again, his pulse is generally not only rapid, but markedly compressible. The appearance of his tongue is also characteristic; there is generally a peculiar dryness down the centre which shades off on the sides into a white coating. Later there appear little cracks in the tongue running at right angles to the long axis of the tongue. These fissures frequently look like chaps which come on a person's hand in cold weather; at their bottom can be seen a line of blood and they may bleed. We must remember that tongues differ, and some patients never have a furred or foul tongue. Another characteristic sign is that the patient invariably complains of a bitter taste in the mouth; this symptom is curiously characteristic of this disease.

Absence of Intestinal Lesions.—Some interesting cases have been reported in recent years of typhoid fever occurring without the intestinal lesions. It is a general consensus of authorities that the time has gone by when we could regard typhoid fever as an infective process localized in the intestines which creates the general symptoms by the secondary action of its poison. On the contrary, recent researches have proved undoubtedly that the disease is an infective one, invading the organism through the lymphatics of the intestines and infecting the whole system. The intensity of the lesions is generally proportioned to their proximity to the point of inoculation. Therefore, the force of the disease may fall upon the lymphatic tissue or the central nervous system or parenchymatous organs. In other words, the intestinal tract is nowadays to be regarded as the point of departure of the typhoid bacillus and not the only place for its development.

The Widal Reaction.—There is a great deal of obscurity in the medical profession as to the value of the Widal reaction and even its significance when present. It was believed by Widal that it was the reaction of the body against the toxines, while Courmont thought it the arousing of the defensive forces of the organism, giving it great prognostic value. Grüber thought that the degree of the strength of the reaction showed the amount of immunity of the system against the poison. It is not known exactly what the substance is which produces the reaction. It undoubtedly is found in the serum of the blood rather than in the cells, and it bears a close connection with the albumins, globulins, and fibrin. The objection to the use of the reaction is that it may appear suddenly within the space of a day, or may as quickly disappear, and therefore the negative side of the question is uncertain. Again, it is rarely to be found earlier than the fifth day, which is the time when it is of most value, and again, in some cases where the examinations were made repeatedly where undoubtedly typhoid fever existed, no specific reaction was found at all. Another source of danger is the fact that positive reaction has been found after eight and ten years after the disease, and should such a patient fall sick of a fever it might erroneously be diagnosed as typhoid. In the examination of 2000 cases which were not typhoid in nature, scarcely a dozen have been reported which have given positive reaction. On the other hand, a sign which is present in 95 per cent. of the cases, cannot be ignored, although it is more definite in value as a positive sign than as a negative sign.

Four Types of Cases.—The four following cases illustrate nicely clinically the several types of the disease. The first case was admitted to the hospital on the 10th of November, with a history that the disease was thought to have begun on the snd. The patient was a boy 13 years of age. In this connection it is well to note that typhoid fever is largely that of adolescence; as we grow older the liability to take typhoid fever diminishes. This is undoubtedly due to the fact that glandular structures

in young people are more active, and there is, of course, an increased tendency to become infected with such diseases as are caused by micro-organisms infecting the lymph glands. Tonsillitis, for example, is more common in young people, in fact, it is rather uncommon to see an old person suffer from tonsillitis.

This patient complained of pains in the head, he had some diarrhœa and some vomiting, he talked in his sleep, and for two or three night before the disease began he had active nightmare. He became very much depressed in spirits, and feeling unable to study his lessons he slipped out of the house in the afternoons and wandered disconsolately through the streets. He experienced an aversion to food, and complained of an unpleasant taste in his mouth. On physical examination, it was found that his spleen was enlarged and his abdomen was rather extended and rigid. One word as to the examination of the spleen; it is always well in percussing for the dulness of the spleen to percuss carefully in a line downwards from the axilla; if the dulness extends beyond two inches it is fair to assume that the spleen is enlarged. It is in these cases of continued fever in patients who present no especial symptoms a great confirmation of diagnosis to find that the spleen is enlarged. This case ran a typical course and the fever disappeared on the twentieth day. The heat centre became exhausted, and so his temperature has remained below the average, running about 97 degrees for ten days before it reached the normal figure.

Next case was that of a young man twenty years of age, who came in with a history of typical typhoid symptoms, large pupils, loose stools, languor, and enlarged spleen; he was moderately sick for three weeks, but finally recovered.

The third case is also that of a man thirty-two years of age, with the history of a relapse, which is not uncommon in the history of a typhoid patient. The first part of his fever was rather mild, and he was recovering nicely till all of a sudden, without a show of warning, his temperature ran up to 104 degrees, in which condition he still is. He has been fed most cautiously and prudently, and we do not know how he could fall into this condition unless he has re-infected himself. Possibly a fresh lot of germs that have been locked up in the intestinal tracts have escaped re-poisoning the whole system. The relapses may occur again and again, even as many as five times.

The last case is one of those abortive cases of typhoid fever, in which the course of the disease ran only about ten days. It showed all the symptoms of typhoid fever, including the abdominal rash, and yet by the tenth day the temperature fell to normal. Sir William Jenner has stated that typhoid fever was a twenty-one-day fever, while typhus fever was a fourteen-day fever. As we know now this is a distinction that will not always hold good.

Cases Apparently Mild May Be Serious.—It is well for the practitioner to carry firmly in his mind the fact that typhoid fever is always a dangerous disease. The mildest case demands the strictest vigilance, the utmost care. It is in fact a question whether the physician ought not to put more injunctions upon the nurses handling mild cases than those handling severe ones, for the nurse and the family, and even the patient, often develop contempt for a mild case and do things which they would never dare to attempt if the symptoms were more severe.

I well remember a case of my practice which illustrates this fact. I had a young woman ill of typhoid fever whose temperature never got above 101 degrees. She was bright and cheerful; her physical condition was good, and her family felt that I was an alarmist in ordering strict treatment in that case. But for the thermometer one would not have thought her sick. In fact, I found subsequently that it was their habit to allow her to get out of bed and sit up partly dressed at times when they knew I would not call. She was nursed by her mother, who felt that entirely too much fuss was being made over her patient. I had been to see her one day and found her temperautre was 99 degrees, and she felt so well that she insisted on having solid food. I read her a warning on necessity for care for a time, but it fell on deaf ears, for I had scarcely left until her mother gave her a raw tomato to eat. This was about noonday, and at night at 7 o'clock I was sent for in great haste to come and see her. I found that she had died before I could get to the house, from a furious hemorrhage from the bowel. Then the thoroughly conscience-stricken mother confessed to me that she had been allowing her daughter all sorts of liberties, because, as she expressed it, "her daughter seemed so well." An autopsy was refused, but undoubtedly her indiscretion in diet had caused her death.

Moving Typhoid Fever Patients.—In one of the largest hospitals it has been the experience of the physician that patients sent to the hospital in the first week of the disease do well; those sent in during the second week do not get along as nicely, while among those that are unfortunate enough to come in the third week a large percentage died. It is a good rule to follow that when a case of typhoid fever is well established, the best course to follow is to obtain the best nurse you can, fix local surroundings as well as possible, and stay right where you are.

The Diet in Typhoid Fever.—Like other things in medicine, the question of diet in typhoid fever is one that varies from a liberal to a restricted diet. Undoubtedly, the best line of treatment in this direction is that outlined by Shattuck, who thinks we should pay more attention to the patient than to the disease, and while he does not advocate an indiscrimniate diet, suggests that we feed him with reference to his digestive powers rather than solely or mainly with reference to his fever; for the view is that the danger of accidents from the local intestinal ulceration is not increased by allowing him to partake of articles which leave no irritating residue and which cautious trials show are digested without disturbance or discomfort. At one end of the scale are cases with such irritability or weakness of the stomach as to lead to the unfortunate term gastric fever, or those with pronounced diarrhœa and undigested food in the stools; at the other end are those more numerous cases with a clean tongue and desire for food. Between the two is every gradation. The life of the former may depend on tthe skill and ingenuity of the doctor, assisted by the intelligent devotion of the nurse. The comfort and duration of the disability of all others may be materially modified for good by careful study and wise individualization of our cases. A long list of permissible articles from which selection can be made for different cases and for the same case at different times under varying circumstances can be given. That which I append makes no claim to completeness, but is meant merely to be suggestive and illustrative:

Typhoid Diet.—1. Milk, hot or cold, with or without salt, diluted with lime-water, soda water, apollinaris, vichy; pepto-genic and peptonized milk; cream and water (less albumen); milk with the white of egg, slip buttermilk, koumiss, matzoon, milk whey, milk with tea, coffee, cocoa.

2. Soups; beef, veal, chicken, tomato, potato, oyster, mutton, pea, bean, squash; carefully strained and thickened with rice (powders), arrow-root, flour, milk or cream, eggs, or barley.

3. Mellin's food, Eskay's food, bovinine, somatose.

4. Beef juice.

5. Gruel; strained corn meal, crackers, flour, barley water, toast water, albumen water with lime juice.

6. Ice cream.

7. Eggs, soft boiled or raw; eggnogg.

8. Finely minced lean meat, scraped beef. The soft part of raw oysters. Soft crackers with milk or broth. Soft puddings without raisins. Soft toast without crust. Blanc mange, wine jelly, apple sauce, and macaroni.

TREATMENT OF GONORRHEA OF THE UTERUS.

When gonorrhea is dormant in the uterus it is not possible always even to find the gonococcus in the discharges from the part. But, although this state seems so quiescent, it may become very active under the influence of an exciting cause. There is no doubt that many cases of septicemia whose origin is obscure, must come from the rejuvenation of gonococci which have lain dormant at this point. It is a common tendency for gonorrhea in this region to lapse into a latent condition, but the acute attack which may follow a decrease in the resistance of the infected tissues, or an increase in the activity of the gonococci, can be even much more disastrous than is possible by a fresh infection. These exciting causes are commonly bruises to the tissues produced by confinement, operations, or any outside injuries to this region.

It is more common to find gonorrheal inflammations in the vaginal tract and at the vulva, than in the urethra or the bladder in women. Not only are they more common here, but they exhibit more virulence. Vaginal gonorrhea when fully established is a troublesome disease to treat, and a serious one, too, and from its danger of spread to the uterus and its appendages producing the severest form of pelvic inflammation. The compound racemose glands of the cervix are peculiarly the home of the gonococcus, and here frequently gonorrhea in its latent form lingers.

The classical article of Noeggerath on latent gonorrhea twenty-five years ago marks an epoch in the history of this lesion. As a result of his paper gynecologists throughout the world have been convinced that on account of the various conditions it can produce it is a very much more important disease than it was considered formerly. Gonorrhea is undoubtedly most scientifically classified as "a specific catarrh of the mucous membranes, especially of the genito-urinary tract, caused by the gynococcus Neisser." It has been proved without doubt both clinically and pathologically that the poison can penetrate far beyond the mucous membrane and produce general constitutional disease far outside of the genital region. It may appear in future years that this disease lies as the fundamental cause of many obscure pathological conditions. Winckel reports that he believes that not only the gonococcus reaches the peritoneum by ascending the mucous membrane of the uterine cavity, but that it also actually penetrates the uterine wall. Wertheim regards gonorrhea of the uterus as being more than an inflammation of the mucous membrane; he classifies it as an "interstitial endometritis with suppurative catarrh."

In fact there have been recent researches on the wanderings of the gonococcus through the system with quite remarkable results. Ahman has discovered in the blood of a patient suffering from gonorrhea, diplococci, which had all the properties, both of form, staining qualities and culture appearances, and a pure culture of which produced gonorrhea on being inocculated into the urethra of a young man. In the case from which this micro-organism was taken the patient's shoulder, fingers and right hip were affected. In another case, of a girl who exhibited through life an endocarditis and gangrene of the foot following an attack of gonorrhea, it was found at the autopsy that the heart valves were infected with gonococci. Gonococci had been found in the periarthritis of the elbow, in the pus of the wrist joint, in a newborn child following gonorrheal ophthalmia, in pleurisy, in muscular abscess and other conditions. It has also been proved that it is not always a pus producer, at least on serous membranes, for in many of the affected joints and tendon sheaths in the reported cases there was found no pus.

The chronic nature of this inflammation shows the tendency to increase the number of glands, as well as causing inflammatory changes in the muscular tissue and an infiltration of the connective tissue at the expense of the muscular tissue. This is responsible for many of the indurated enlarged uteri which are so prominent a feature in gynecology.

The possibility of meeting this condition in any walk in life and under conditions most innocent and ignorant in their nature makes the consideration of treatment of vital importance.

If the case is seen early after the invasion of the uterine mucosa by the gonococcus, it is the opinion of some operators that it is better to dilate, then curette with irrigation of the uterine cavity, following this with cauterization. It is the belief of these operators that this is sufficient to prevent the spread of the disease. This matter is not settled by any means, however, for other equally good authorities strongly advise against the use of the curette in acute gonorrhea, thinking that the trauma thus induced favors the spread of the disease. Again, other operators object to the use of irrigation after curetting of the uterus, thinking that it is possible for septic particles to be swept in this way into the Fallopian tubes and spread the disease from this position. This class of operators employ only the curette, followed by cauterization of the mucous membrane of the uterus.

Unfortunately if the disease has so far advanced as to create alterations in the deep tissues of the uterus or if the tubes and ovaries are involved, dilatation and curettement may not only be of no avail, but may become an actual cause of danger by favoring an extension of the disease. The tortuosity, constriction, thickening and even a complete occlusion of the tubes as a result of gonorrheal invasion, makes it impossible to treat salpingitis by applications to the tubal mucous membranes, so that the question arises, What is to be done for the uterus and its appendages when they are so altered in structure as a result of this poison as to be a constant source of bad health?

It was the teaching of the gynecologist of the fifteen years ago that it was sufficient to remove the diseased appendages; but fuller experience in this line of cases showed that the uterus, which was the avenue through which the poison passed, was still liable to attacks of gonorrheal inflammation, and as it is now a useless organ the next consideration was the suggestion to remove, in these conditions, not only the appendages but also the uterus. The suggestion was made some years ago to evacuate the purulent contents of diseased tubes and ovaries by a vaginal incision and drainage, but this is a

very difficult operation to do in practice, for the action of the gonococcus has been to cause destructive changes in these tissues.

On the other hand, there has lately sprung up a very strong reaction against the wholesale removal of ovaries, and a number of gynecologists have recently reported a series of brilliant cases in which only portions of this gland were removed, and by constructive surgery the remainder were saved. This is partially due to the recently promulgated glandular theory of Brown-Sequard. He believes that "every gland, whether provided with excretory ducts or not, gives to the blood a certain useful principle, the absence of which is felt by the general economy and made apparent after its extirpation or the destruction or modification of its functional activity by disease." It is therefore now the fad of gynecologists to leave, if possible, a small portion of the ovarian tissue behind, although in actual practice this procedure has led to numerous secondary operations, which, to those familiar with the clinical history and the character of the lesion resulting from gonorrheal infection of the uterus and its appendages, need surprise no one.

Many of our best operators believe that total removal of the ovaries does nothing more than precipitate the menopause, which is followed in women of great deteriorated health temporarily only by unpleasant sequelæ. It must be remembered, also, that the uterus and its appendages, even when they have been infected by the gonococci, are not beyond being impregnated with results disastrous to mother and child.

The following are a few cases descriptive of treatment in this disease:

The first case is that of a young girl, eighteen years of age, who has been repeatedly exposed to infection from various sources. She was suffering from profuse discharges, and upon examination her uterus was found to be large and pushed to one side, while on the other side was detected a fluctuated mass. She was operated upon as follows: First of all, the uterus was dilated, curetted, and packed with iodoform gauze. After this was done an abdominal incision was made, when it was found that a dilated Fallopian tube was the fluctuating mass on the left side. It was occluded at its outer extremity and adhered to the ovary. Tubes and ovaries on both sides were bound down by recent adhesions and the tubes contained blood and pus. Both sets of appendages were removed, and the patient's condition improved markedly.

The next case was that of a young woman who had borne several children and had several miscarriages. She was operated on for laceration of the cervix, which seemed to set up symptoms of acute gonorrhea. She had high fever, irregular chills, great muscular soreness, painful micturition and purulent vaginitis. Palliative treatment seemed to do no good, and as she developed swelling in both tubes she was operated on. She was in such a wretched condition that only the appendages were removed, and she has done fairly well since, although from time to time she has had a threatened return of her uterine trouble.

In operating for all trouble of the uterine appendages it is the present tendency among careful gynecologists not to operate so early as formerly, not that one should wait until the patient's condition becomes bad, but that if the general condition does not demand operation there is a tendency to wait until the acute symptoms subside. There are two reasons for this; it has been found that much better results are obtained in this way after an acute attack of pelvic peritonitis than by prompt operation, when the bowels are adherent and the adhesions are so tough that the bowel is apt to be torn in breaking them up. Also, if time is allowed for the absorption of the exudate and the restoration of the peritoneal cavity to as nearly a normal point as possible, is another factor.

The general consensus of opinion of to-day is that gonorrheal cases in women in which there are extensive adhesions and destructive processes are not generally cases for so-called conservative action.

LOCATION OF FOREIGN BODIES IN THE BRAIN BY THE X-RAY.

H. Stamm (*Ctlblt. f. Chir.*, 1902, No. 12; *Med. News*) elucidates the following ingenious procedure by which he located a bullet in the brain with all the accuracy essential to good surgery, and without the delay of mathemetical computations. The details of the method are briefly these: A strip of soft sheet lead was cut, say, two centimeters wide and long enough to reach from the root of the nose to the nape of the neck. At regular intervals, which he made one centimeter, the strip was studded with flat-headed nails, vertically, and secured in postiton with wax. The strip was then applied to the skull in the middle line from the root of the nose to the nape of the neck and secured with bandages from the forehead to the occiput. A radiograph was now taken in such a position that the plate was as nearly as possible parallel with the row of nails. The bullet was seen to be beneath the interval between the twenty-third and twenty-fourth nails, slightly projected toward the interior of the skull. This place was suitably marked on the skin and then the strip was removed and placed over this point parallel with the coronal plane of the body. Another radiograph was now taken and the bullet was found to be under the ninth nail, similarly projected a short distance toward the center of the skull. This second point was therefore marked as representing on the surface of the skull practically the exact position of the bullet. A small skin and bone flap was made above it and the bullet found exactly where is was indicated. These two pictures are the only ones necessary if the foreign body be near the surface. If, however, it be deeply placed, for example, in the neighborhood of the temporal lobe, a third radiograph is necessary, with the strip of nails horizontally placed corresponding as nearly as possible with the level of the body, as indicated in the first two pictures. The three planes of projection thus obtained will locate any foreign body with the smallest possible chance of error.

Soup for Breakfast.—Last year soup for breakfast was tried in the French army in place of coffee, and this alteration was so much liked by the soldiers and gave such satisfactory hygienic results, it has been determined to give it a more extensive trial. An order has been issued by the Minister of War that until August 31st next, a soup ration shall be issued instead of coffee to all ranks in the Sixth Army Corps, and the results reported to the War Department in September.

—The hitherto unknown element in milk, a new ferment, has been discovered, called galactose, which is proving of value in the ripening of cheese. The properties of this ferment are similar to the secretion of the pancreas. Old cheese is a predigested food, and the digestion is wrought by the galactose. The new discovery will, it is believed, revolutionize cheese manufacture, doing away with all curing rooms, cheese being sent directly to the refrigerator.

MISCELLANY.

—Paris has 87,655 trees in its streets, and each tree represents a cost to the city of $35.

—The Hawaian Board of Health are on the lookout for a physician at the leper settlement on Molokai. The remuneration is $250 a month.

—Mosquitoes are fond of anything blue. That is a scientific discovery that is furnishing an argument for changing the color of the United States Army shirt.

—In the future no one but a graduate of a regular school of medicine will be allowed to take any of the postgraduate courses to be given by the University of Pennsylvania Medical School.

—Dr. J. Mount Bleyer says that paraffine is an antidote for the X-ray burns. This in his opinion will permit the use of the X-ray in the treatment of malignant disease without having any undesirable effect.

—Harvard College has now entered into formal possession of the site for its new medical school. The title is taken by the President and Fellows of the institution, and the consideration given is $606,008. The land which comprises the site for the new medical school was conveyed to the trustees representing the college in August, 1900. It is a very large tract, covering 1,128,824 feet of land.

—In England, recently, an old lady gave her doctor $4,000 in various sums, simply as a kindly expression of her appreciation and gratitude. After the old lady's death her executors brought suit to recover this money, and succeeded, the judge holding that "the relation of patient and physician is a confidential relationship, and where it exists, as it did in this case, the donor must have had competent and independent advice before a gift can be supported. There is no exception to this rule."

—An article by N. S. Scott, in the *Cleveland Med. Jour.*, January, 1902, is interesting as showing that chloroform may be administered to a sleeping person without awakening him. An hysterical woman of twenty-one, who had previously become so excited at the thought of an anesthetic that operation had to be postponed, was afterward anesthetized and operated upon without regaining consciousness from an ordinary sleep. Three or four other adult cases are reported. Nitrous oxide gas may be even more easily used than chloroform, but the feat is probably impossible with ether.

—At the annual meeting of the recently established Hospital for Women, of which the staff are all women, Sir Thomas Smith, surgeon to St. Bartholomew's Hospital, said that the surgical work done had shown the capacity of women for successfully performing all the operations which were performed on their sex. Upwards of 1900 obstetrical cases had been attended without a single death connected with the process of parturition, though the normal fatality was 1 in 500; 577 major operations were performed with a mortality under 6 per cent. He had attended the operations in the theatre and had nothing but admiration for the great celerity and dexterity which he had witnessed.

—A well-known Brooklyn physician of Spanish extraction has not yet mastered the intricacies of the pronunciation of the English language. Some time ago the doctor had occasion to send a specimen of urine for chemical examination to a druggist who attends to this work for the physician. A servant was dispatched with instructions that the druggist should "taste" it. The fluid was in an ordinary wine bottle, and the German druggist eagerly swallowed a good-sized draught, and immediately declared it to be the worst wine he had ever had the misfortune to sample. When the doctor informed him that it was a specimen to "test" chemically, the druggist was enlightened but not satisfied.

—The American, even the poorest, spends twice or thrice as much as he need or should upon his food. A capital illustration of this fact (*American Medicine* says) has been given of late in New York City, where a "one-cent restaurant" has been established, and has so far proved successful. A large bowl of pea soup, hominy or oats, etc., is served for one cent, and other things, coffee, bread and butter, beans, puddings, etc., at from three to five cents. A meat dinner for ten cents was offered, but proved unpopular. Any of the one-cent portions contain food elements sufficient to supply the nourishment required in a full meal. Two or three of these one-cent portions per day, if varied according to appetite, should maintain the weight, strength and health of an ordinary individual for an indefinite time, if such extreme economy is necessary.

—Dr. Harry Campbell, writing to the *Lancet* for March 8th, gives the following as the features of abnormal grayness: (1) Premature blanching of the hair is the most important sign of it, and the earlier the grayness appears the greater the abnormality—thus it is greater in one who turns gray in his twenties than in one who does not begin to go gray till in his thirties; (2) asymmetrical grayness is so well recognized to be due to defective nervous action that I need not further dwell upon the fact; (3) grayness which does not begin in symmetrical foci spreading thence, but affects the whole scalp or beard equally in all its parts, is unless it progresses slowly, generally abnormal; (4) rapid blanching is always abnormal; and (5) when the whole of the hair on the scalp is decidedly gray, while that on the face retains its color completely, the condition is abnormal. We may frequently observe this condition on men in their early thirties or early forties. I have never observed the exact converse of this, though it is quite common for men to grow more rapidly gray in the beard than in the scalp; this I do not regard as abnormal.

—Major Ronald Ross has submitted, according to the *Journal of the American Medical Association* (*Med. Age*) a very satisfactory report on the anti-malaria work of the expedition to West Africa despatched from the Liverpool School of Tropical Medicine. At Freetown, Dr. Logan Turner, employing about seventy men, has drained nearly the whole of the most pestilential parts of the town. The areas dealt with were formerly full of hollows, pits, and ill-made drains, which in the rainy season contained stagnant pools breeding swarms of mosquitoes. A gang of men was also employed to collect old tins, bottles, and other rubbish from the houses, and 2257 cart-loads of such refuse have been removed and 16,295 houses visited. In Dr. Ross's opinion the possibility of ridding Freetown and therefore any town of mosquitoes has been demonstrated. The change in the demeanor of the Europeans is striking. Two and one-half years ago, when Dr. Ross visited the town, he never saw a more gloomy place. The inhabitants felt as if a sword were hanging over their heads. All this is changed, and they are as cheerful as the Europeans in India. Arrangements have been made for Dr. Taylor to proceed to Cape Coast in order to start anti-malaria work there, as the mortality is very high.

ORIGINAL ARTICLES.

THE STUDY OF THE VARIOUS PHASES OF DIGESTION.

BY WM. WORMLEY, M.D., PHILADELPHIA.

SOME years ago Cohn took up the question as to whether rest or exercise was more favorable to digestion. For this purpose he selected a number of dogs to which he gave scraped meat and water. Some of these dogs were obliged to exercise, while others were kept at rest. Then, after a certain period he removed the contents of the stomach and made an examination. As a result of this he found that with the dogs which had been kept quiet the process of digestion was at its greatest power one hour after eating, at which time the juices of the stomach were rich in hydrochloric acid and peptones, but poor in lactic acid. He found at the end of two hours' digestion the process was much further advanced, while the quantities of hydrochloric acid and peptones were considerable, but only a trace of lactic acid could be found and digestion was complete within the course of six hours.

With the dogs, on the other hand, that had been required to exercise actively for two hours after their meals he was able to find only a trace of hydrochloric acid and peptones, and large quantities of lactic acid. It was only after the lapse of five hours, the animals having rested in the meantime for three, that digestion began to be again marked by the presence of hydrochloric acid and peptones, and at the end of six hours of digestion the process had not been completd.

Ewald has come to the same conclusion, regarding hydrochloric acid to be a product from secretions, while lactic acid is a product of fermentation, and as a result, they believe that the slower the flow of the first, the slower the digestion, and vice versa. From this series of experiments these authorities come to the conclusion that exercise, especially more or less active, after a meal, retards digestion, and they believe that it is not possible to determine accurately the length of time required for digestion, varying not only with the person, but with the nature of the ingested food. Normally, after a meal, all food should disappear from the stomach at the end of seven hours. If, after this period food is found in the stomach, it shows that the process of digestion is impeded. A test breakfast of soup, a piece of beefsteak, and a slice of white bread, with water, can be given. In seven hours' time, the stomach is to be washed out, using about three funnels of water, and this water is examined for undigested fragments of food, which in health it should not contain.

To test the absorbent powers of the stomach is not difficult. For example, Penzoldt has found that by giving a small amount of iodide of potassium (3 grains), in a gelatine capsule with a wineglassful of water at least three hours after a meal, or preferably on an empty stomach, the salt is absorbed, and can be detected in the saliva. The patient is directed to spit once a minute on a bit of starch paper, which is then touched with a drop of fuming nitric acid. In health, in from seven to fifteen minutes there is found first a reddening and then a bluing of the paper. The motor activity of the stomach can be tested easily also. Salol is changed in an alkaline solution to salicylic acid, which is not affected by the acid gastric juice, but passing through the stomach it is changed to salicylic acid by the alkaline pancreatic juice, absorbed, and eliminated by the urine. Give the patient three to five grains of salol, and examine the urine every fifteen minutes or half hour. A drop of tincture of the chloride of iron dropped in the urine containing salicylic acid gives a deep brownish-red color. This color should be found in from half an hour to an hour after taking salol. Should it not appear until after that time the motor activity of the stomach may be regarded as below the normal.

Dilatation of the stomach is commonly preceded by hypertrophy of the muscle, and Ewald divides cases of dilatation into two groups: (1) those caused by mechanical obstruction of the pylorus, as in malignant disease, fibrous thickening, with or without ulcer; (2) those due to asthenia or akinesia of the stomach, a condition liable to arise in the course of anemia, various neuroses, exhausting acute or chronic disease. In man the position of the pylorus, owing to his erect position, favors dilatation. Dilatation may also arise from pressure on the pylorus by a tumor outside the stomach, from ingestion of an excessive amount of coarse food, from direct lesions of the walls of the stomach in portal congestions and in Bright's disease, from adhesion of the stomach walls to other tissues, or, from chronic gastric catarrh.

To perform the operation of gastric lavage, the patient should sit erect with the head thrown a little back, the mouth well open, and the tongue depressed and pulled forward a little by a spatula or the left index finger. The tube is then passed into the fauces, past the epiglottis, and into the pharynx. Once engaged in the esophagus, there is no further trouble, unless it sticks for a moment at the cardiac orifice of the stomach. If it does, a little water poured into the tube overcomes this. If the patient begins to retch or to show signs of suffocation, he should be told to take deep breaths. Rarely is it necessary to withdraw the tube. When the tube enters the stomach, generally a bubble or two of air comes up. Milk is a good material to lubricate the tube and facilitate the introduction, being less nauseating than vaseline or any form of oil. To wash out the stomach, a piece of rubber tubing is connected with the stomach tube, with a funnel at the end, and about a pint of warm water is slowly poured into the funnel, holding the funnel end well up. Suddenly lowering the funnel will siphon out the contents of the stomach. To withdraw the tube, it is necessary to compress the end tightly before withdrawal, to prevent the contents of the tube from dropping back.

Riegel's method for the examination of gastric juice is as follows: "About three hours after a meal, having passed the tube, a certain part of the contents of the stomach may be pressed out by external pressure over the abdomen or a voluntary effort on the part of the patient. The stomach-pump or aspirator can be attached to the tube, and the contents after filtering are ready for the test. To ascertain the digestive power of the stomach a bit of egg-albumen is put into a test-tube containing ten or twenty cubic centimetres of the juice, and kept at the temperature of the body. For this purpose, it is well always to take a piece of the same size. Sticker advises a disk eight millimetres across and one-half millimetre thick. If the juice be undiluted, this should be digested in from two to three hours. With diluted juice the time, of course, will vary. If juice enough be obtained, it is well to perform control experiments at the same time by taking three test-tubes and leaving one untouched, adding a drop of dilute hydrochloric acid to the second and a flake of pepsin to the third."

Free hydrochloric acid constantly present is the strongest proof of the absence of cancerous disease, but it must be remembered that the absence of hydrochloric

acid from the gastric secretion is noted in several other diseases, such as atrophy of the gastric follicles and amyloid degeneration of the organ. Several serious mistakes in reference to operation have been made in late years, owing to this oversight. Carcinoma has no mysterious power over the production of hydrochloric acid. It is simply accompanied by inflammation or atrophy of the gastric tubes—a condition prone to occur in other wasting conditions. Should the hydrochloric acid be increased the symptoms are thirst, heartburn, pain at night, and acid vomiting. Probably increased acidity of the gastric juice is a cause of gastric ulcer, the extreme acidity of the juice making self-digestion easier. In this form of dyspepsia the organic and volatile acids are more or less completely wanting, and the digestion of proteinaceous matters is well accomplished; it is even probable, considering the rapidity of peptonization, that the presence of peptones in excess hinders the rest of digestion. The digestion of starchy food is, however, impeded, for with more than one-tenth of 1 per cent. of hydrochloric acid in the gastric juice maltose ceases to be formed. If these patients are given an amylaceous mixture, which is examined after an hour incomplete saccharification has occurred. In severe forms of dyspepsia there may be permanent hydrochloric hypersecretion, so that in the morning when the stomach is empty enough hydrochloric acid can be aspirated to digest albumen.

It is well to remember in actual practice in giving predigested foods that most peptones have a distinctly bitter taste which may be very objectionable to a patient. This taste can be overcome in part by the addition of flavoring substances or avoided altogether by arresting the process of digestion before it is complete. Formerly pepsin was thought to be the most efficient agent for the preparation of peptones, but nowadays pancreatin is considered far superior. Its value depends on the fact that it contains two distinct classes of digestive principles, pancreatic diastase, which dissolves starch, and trypsin, which acts on albuminous substances. The physician in stubborn cases may wish to test his preparation of pancreatin. Roberts' test is excellent and simple. If pancreatin be added to fresh milk without an alkali, in the course of a few minutes the liquid acquires the property of curdling abundantly on boiling; the value of pancreatin depends upon the amount required, a small amount only being required. Again, five grains of pancreatin added to twenty grains of the bicarbonate of soda should so alter the caseine in one pint of milk that in an hour at a temperature of 115° F. no coagulation will be seen on adding nitric acid.

In chronic gastric catarrh it has been noticed that great benefit is derived from mixing the milk with lime-water. The milk then is not vomited, and on washing out shows that it was clotted in the stomach. The quantity of lime-water added should be two tablespoonfuls to one-half litre of milk. The quantity is of great importance, in view of the frequent use of lime-water as an addition to milk to prevent coagulation. There can be no doubt that if a sufficiency of lime-water be added to render the milk distinctly alkaline, rennet ferment will not cause coagulation, and, what is more, the contact of the rennet with the alkali permanently destroys it, in part at least, so that subsequent acidification does not restore its properties. One-third of lime-water at least is needed to accomplish this.

In the question of treatment when acid is in excess, the stomach should be washed out at night, while laxatives should be taken in the morning, making the diet albuminous with avoidance of the carbohydrates. If lactic acid from fermentation is found the stomach should be washed out at night and hydrochloric acid given to check the formation of lactic acid. When the hydrochloric acid is diminished or absent the dose of five or ten minims is too small, thirty to forty-five minims should be given in three doses fifteen minutes apart, beginning about an hour after eating. The action of bitter medicines on the process of digestion has been considered by Reichmann, who limited his researches to the human stomach, employing gentian, quassia, and wormwood. Cold infusions (twelve parts to each hundred) of these bitters were given without food and before or during a test meal of distilled water and albumen. The results showed that after the administration of these bitters, which all act alike, the secreting power of the stomach is less than after the taking of distilled water. But when the drug is eliminated from the stomach the secretory apparatus is excited to increased activity. He found that if the food and the infusion were swallowed at the same time both the secretory and the motor function of the stomach were impaired. He came to the conclusion that bitters should be used only in cases in which the gastric juice is diminished, and that they must be taken about an hour before eating.

Salt was tried to promote the secretion of hydrochloric acid. It was useful in certain cases, any excess of acid formed being neutralized by the bile acids in the small intestine. Reichmann, however, observed that by giving salt when the stomach was empty and before and after the test meal he was able to determine that, so far from increasing the secretion of gastric juice it actually slows it. The diminution of the acidity of the gastric juice, as was already proved after the introduction of sodium chloride, arises chiefly through transudation from the vessels of the mucous membrane, which is irritated by the salt, but the transudate is alkalin neutralizing the hydrochloric acid.

Undoubtedly it is time that in mucous dyspepsias, and even in cancer, where hydrochloric acid is lacking, it is worse than useless to deprive the patient of food principles contained in the starches and especially of such dietetic substances as are both amylaceous and nitrogenized. In conditions in which hydrochloric acid is in minimum proportion, the amylotitis period of digestion is predominant and rapid, and considerable absorbable maltose is formed in facility. In such cases, soups with rice, etc., may be permitted, and also bread and biscuit; fat should be given in sparing quantity or withheld altogether; sometimes potatoes roasted in the ashes, pea soup or porridge are excellent. Starchy food should be reregarded as poison in dyspepsias with hypersecretion of hydrochloric acid. Such food is not changed by the gastric juice; the excess of acid may produce spasm of the pylorus and retention of the amylaceous substances in the stomach, or exaggerated contractions of the muscles of the stomach, causing premature expulsion of the fermenting aliments. Fresh meat and fish are the proper diet in these cases, and the patient should virtually live on beef, mutton, fish, and lean ham, in preference to fowl, game, or veal. In the questions of beverages in dyspeptics, with hyperacidity are the worse for wine; and while fermentation liquors are to be avoided, whisky and brandy in moderation seem to be no harm, except to digestion slightly.

Dujardin-Beaumetz has suggested three more liberal plans of diet in these conditions: "1. Dyspepsia due to oversecretion of gastric juice, diet to be purely vegetable, consisting of eggs, farinaceous preparations, and fruit. (*a*) The eggs to be soft boiled, especially the yelk. (*b*) Farinaceous foods, to be taken in the form

of soups—as potato, turnip, lentil, Indian, wheat, chestnut, oatmeal, barley, and macaroni soups—all these, of course, to be rendered as thin as possible. (*c*) Vegetables to be thoroughly cooked and to be taken in the form of vegetable soups, or soup made of small peas, all to be well boiled; the same holds goods for spinach and turnips. (*d*) All fruits, avoiding raisins, should be used in the form of jelly. (*e*) The bread should be well baked, or toasted. (*f*) Drinks—wine mixed with water, light beer or milk, mixed with alkaline waters.

"2. Dyspepsia due to deficient secretion of the gastric juice—peptonized substances, toasted bread, bouillon, mixtures of broths and milk, powdered meats, scraped meats, pepsin, lemonade with hydrochloric acid:

℞ Hydrochloric acid ..3.3 (11.7 grammes).
Water .....0.1 (½litre).

One glass after each meal.

"3. Dyspepsia due to sympathetic troubles, diet to be purely vegetable."

THE RESEARCHES INTO THE CAUSE OF ADDISON'S DISEASE.

BY M. SHELLENBERG, M.D.

A NUMBER of cases of clearly defined degeneration of the adrenals have been reported without the usual co-existent bronzing; for example, Ballenghein has reported a case of tuberculous disease of the capsules without bronzing in a man aged twenty-six years. At first he presented only the signs of a tubercular pleurisy with slight pneumonic involvement; late in the case persistent and uncontrollable vomiting set in, lasting almost to the close, when the patient fell into a semi-comatose condition, in which he died, after slight convulsions. Besides the tubercular adhesions at the apices, the lower posterior portions of the pleuræ were thickly studded with tubercles; the lungs congested and showing granulation tubercles; heart showing general atrophy, no valvular lesions; peritoneum in the right iliac fossa and right hypochondrium studded with tubercles. Both kidneys congested, smooth beneath the capsules, the left presenting two tubercular nodes in the parenchyma. The spleen was large; perisplenitis; a number of tubercles on capsule. No meningeal involvement .Right adrenal almost double the size of the other; weight twenty grammes. On section found to be almost entirely cheesy. Left presenting the same lesions. While in this instance there was absence of bronzing, the extremely rapid process of the tuberculosis it is possible gave too short a time for any pigmentary deposit. Collier reports on the right adrenal of a woman, who had been ill for nine months with a gradual exhaustion and persistent vomiting. She was anemic, and not bronzed. The most characteristic symptoms of the case were the apathy and languor. Both adrenals were found enlarged; the right entirely caseous, the left reduced to a sac containing cheesy material. The history and appearance of these organs point to the existence of the disease for at least nine or ten months—a circumstance making the absence of bronzing a more remarkable feature. Lejars has found marked tubercular enlargement and degeneration of both supra-renals, in a dissecting-room subject, without any visible bronzing. The left adrenal was developed in a fibrous covering; it was rather firm in consistency and yellowish. The right adrenal was much smaller than the left, made up of irregular nodules, cheesy, but less degenerated than the left. There were tubular nodes in the parenchyma of the right kidney, some broken down. Fistulæ in the scrotum led to a partly degenerated left epididymis, the body of the testicle is healthy. Right testicle and epididymis were both intact. The seminal vesicles, the vasa deferentia at their termination, and the lateral lobes of the prostate are softened and cheesy. There were no visible extensions into the lungs, all the viscera were normal. Along the lumbar portion of the column was a chain of enlarged and cheesy lymphatic glands, reaching up to the level of the adrenals.

In taking up the experimental side of this question we find that Alezais and Arnaud who have done much work believe that the supra-renal capsule is not necessary to life. Its functions may, in the lower animals, be disturbed or even suppressed, at least for a short time, without the organism showing any other notable modifications except an increase in the pigmentation of the skin and mucous membranes. Yet they noticed that along with such mild cases, lesions of the adrenal bodies frequently cause a fatal termination in the animals experimented upon, quickly by some nervous incidents, early or late, accompanied by an ascending alteration of the sympathetic nervous system acting through the lateral columns. Stilling was able to establish a compensatory hypertrophy in one adrenal upon removal of the other, and he has come, contrary to the French observers mentioned above, to the conclusion that the prominence accorded by Addison to the adrenals, in the production of the disease bearing his name, is essentially accurate but he does not attribute the most of the pathogenesis of the affection to alteration of the nerves of the sympathetic ganglia. On the contrary he has found, in his experiments, small bodies of the same structure as the supra-renal capsules in these nervous ganglia, and thinks that in Addison's disease either these fail to develop or are incompetent to carry on the entire function of these bodies. Pilliet demonstrated their existence in the wolffian bodies, and he has also discovered a pigmented body of the size of a pinhead with the histology of a supra-renal capsule in contact with the semi-lunar ganglion. The capsule of the same side was in no appreciable way abnormal, and there were no symptoms referable to these bodies. Alezais and Arnaud do not agree with Stilling on the relative importance of the supra-renal bodies *per se* and nervous system, the changes in the latter being regarded by Stilling as in reality secondary in occurrence by simple extension of the inflammatory process, the peculiar changes underlying Addison's disease being regarded by him as existing in the adrenal bodies.

Tuberculosis is frequently ascribed as the most frequent and important change in the adrenals in Addison's disease. And yet there are various other changes in these bodies, such as chronic inflammation, caseation, or calcareous infiltration, which may be regarded only as the different phases of tuberculosis; while pure atrophic changes are uncommon. The process is tubercular infiltration, tubercle bacilli have been repeatedly demonstrated according to Alezais and Arnaud, "this diffuse infiltration, separating the cells of the organ into little islets, is marked in the cheesy change by a marble appearance on section, the islets of darker adrenal cells showing in contrast with the white, cheesy substance. The process may begin in cortex or medulla, less often in the fibro-vascular zone about the capsule. Changes may be found in the neighboring tissues as the result of such processes in the supra-renal capsules, as alterations in the abdominal sympathetic nerve, changes in the mesenteric glands, tubercular disease of the spine and lungs, alterations in the kidneys and uro-genital

organs. Of these pulmonary tuberculosis is the most frequent accompanying lesion, perhaps, although the relative proportion of pulmonary and supra-renal tuberculosis is not worked out. The authors found, in 20 cases of pulmonary tuberculosis, 5 cases of tuberculosis in the supra-renal capsules (3 of these Addison's disease), 3 instances of marked venous stasis, 2 of intense hyperemia, 3 of sclerosis with or without fatty degeneration, 1 of hemorrhage, and 6 of a practically normal state. Among 7 instances of tuberculosis of the supra-renal bodies the author found Addison's disease in 4. Briefly, these 7 cases may be enumerated as follows, and it is to be noted that among them occurs the instance just referred to of the occurrence of Addison's disease with disease of but one adrenal body; (1) Addison's disease, classical tuberculosis of adrenals, changes in pericapsular nerve-ganglia, normal condition of semi-lunar ganglia and solar plexus; (2) Addison's disease tuberculosis of both adrenals, no pulmonary tuberculosis, tuberculosis of the finger; (3) Addison's disease, pulmonary tuberculosis, tuberculosis only of the right supra-renal body, generalization to the posterior pericapsular tissue, destruction of the pericapsular nerve-ganglia; (4) tuberculosis of both adrenals with Addison's disease, pulmonary tuberculosis, normal condition of the pericapsular ganglia; (5) cheesy tuberculosis of the right adrenal beginning tubercular infiltration of the macroscopically healthy left body, pulmonary tuberculosis, no pigmentations; (6) tuberculosis of the lungs and right adrenal; (7) Addison's disease, tuberculosis of the supra-renal capsules only, changes in the immediate vicinity of the capsules and in the pericapsular nerve-ganglia. It has been supposed by many that Addison's disease arises as an expression of insufficiency in function in the diseased supra-renal bodies; yet these bodies have been repeatedly destroyed in man without the appearance of Addison's disease, and there are on record cases where the disease apeared with but a single capsule involved. The authors regard as more nearly the truth the view that ascribes the phenomena of the disease, especially the prominent nervous symptoms, as the sudden and complete asthenia, the vomiting, the lumboabdominal pains, and often the sudden death, to alterations in the abdominal sympathetics. Nevertheless, the pathological facts thus far established are, in the view of the writers, insufficient to base any theory upon, as in a number of instances the abdominal sympathetic has been found quite normal. In 49 cases met with, the abdominal sympathetics were quite normal in 12 instances; among the rest, a portion were not well examined on this point; and in others only a slight pigmentation of the nerve-cells, or else a fibrous change which occurs apart from Addison's disease in various affections, was found. The authors, however, believe that these nervous symptoms arise directly within the capsules themselves. These investigators do not believe that the medulla of the supra-renal capsule contains nerve-cells, but have found undoubted nerve-ganglia in the periphery of the organ, mostly on the posterior surface, as a constant element. These pericapsular nerve-ganglia are numerous, of a rounded or oval shape on section, contain a number of large cells from thirty to forty micromillimeters in diameter, a connective-tissue stroma, and some few bundles of fibers of Remak. They are provided with arterioles and possess a special capsule."

These bodies are always implicated in the capsular lesion of Addison's disease, although heretofore such changes have been overlooked; the symptoms of Addison's disease depend upon the degeneration of the envelope of the adrenals and the nerve-organs in relation. These French observers call especial attention to 3 of the foregoing 7 cases. In one there was marked tubercular change all about these ganglia, which were, however, intact, and no symptoms of Addison's disease were present; in a second, the pericapsular ganglia, as well as the left semilunar ganglia and branches of the solar plexus, were involved, the symptoms of Addison's disease being present; in a third the pericapsular ganglia alone were involved, the rest of the abdominal sympathetic system being intact, Addison's disease being manifest. They believe that it is not the great sympathetic nerves and ganglia, not the supra-renal capsules themselves, that are involved but the pericapsular nerve ganglia which is the starting point of the symptoms of Addison's disease.

The blood from the supra-renal capsules shows that in its essential nature it is arterial, oxidized blood, and the short, thick vein, which usually pours at once into one of the lumber veins has an excessive amount of muscular tissue in it. That this nature of the blood from these bodies bears in some way upon their unknown function is undoubted, although, it does not especially indicate the character of that function. The importance of the sympathetic abdominal ganglia and nerves in the etiology Addison's disease is growing. Fleiner studied microsopically the changes found in Addison's disease. In one case there was tuberculosis of both adrenals, in the other one an angio-sarcoma of the left organ. In the semi-lunar ganglion and from this point upward through the whole sympathetic to the spinal ganglia, in both these cases, there was to be recognized a pronounced inflammation which apparently followed the vessels, and was followed by degeneration of the nerve-fibers and cells. In both instances, too, the ischiatic, crural, median, and vagus nerves were examined an found to present a high grade of inflammation. The appearance of the spinal ganglia showed that here, too, it was the sensory filaments which were degenerated. Von Kahlden has recently met 2 typical cases of Addison's disease. In both instances caseation of both supra-renal capsules occurred, but in the semi-lunar ganglia and the sympathetics there were practically microscopical changes apparent. No changes were evident in any of the higher sympathetic ganglia. Further, the author has met 6 cases of adrenal caseation, in some of which there was distinct round-celled infiltration of the semi-lunar ganglia without bronzing of the skin.

The author, therefore, concludes from these cases that Addison's disease cannot be said to be directly due to changes in the sympathetic abdominal ganglia. Although, perhaps, this or that symptom of the affection may depend on such involvement of the sympathetic ganglia.

With reference to the inflammatory and hemorrhagic changes described by Tizzoni as appearing in the spinal cord in cases of experimental Addison's disease, the author examined the cord in all eight cases mentioned. The results were, in general, negative in character; while there were some inflammatory and degenerative changes met in these cases, they were very irregular and variable in their degree and in their localization, quite similar to changes met in other general anemic and malnourished cases, as described by Lichtheim and others in the spinal cords of patients dead from progressive pernicious anemia. Leva describes in detail 6 cases of Addison's disease, in 4 males and 2 females, the most between 42 and 50 years of age, the rest younger. The

duration of these cases varied between two months and six or eight years. There were no especial clinical peculiarities. Two were subjects of general military tuberculosis. He mentions two other cases where the autopsy showed the supra-renal capsules the seat of neoplastic formations, but in which no trace of Addison's disease was evident during life. Typical cases of the affection are described by Tyson, the supra-renals both enlarged and cheesy, the abdominal sympathetics enlarged and red to the naked eye; by Bergtold, both capsules enlarged and cheesy; by Drysdale, both adrenals enlarged and cheesy, the semi-lunar ganglia and solar plexus somewhat atrophic, and old tubercular lesions of the bladder and kidneys; and Hawthorne and Buchanan. Tyson's case occurred in a man 35 years of age, and was associated with pulmonary tuberculosis and Pott's disease of the spine. Bergtold's case occurred in a male, aged 35 years, who ascribed his illness to having fallen into ice-cold water about fifteen months before his death, his health never having been good since that occurrence. The lungs showed no tubercular change, nor could any evidence of tuberculosis be found anywhere; sections of the enlarged, caseated adrenals failing to show either giant-cells or tubercle bacilli. Drysdale's report concerned a male, 39 years of age, with the history of previous tubercular disease of the bladder and kidneys. The last case, described by Hawthorne and Buchanan, occurred in a young girl. Pilliet describes a case of tuberculosis of one supra-renal body without pigmentation of the skin. It occurred in a woman, 58 years of age, affected with tubercular joint disease of one hip and pulmonary phthisis. Stylyr reports two cases of primary cancer of the supra-renal capsules, without pigmentation. In the first, both organs were cancerous, but there were no secondary nodules in any of the other organs; in the second, the mediastinal and retro-peritoneal glands were invaded, and secondary nodes were also found in the left kidney and the liver. Histological examination showed that the new growth had taken its origin from the zona fascicularis of the capsules. Napier records a case of Addison's disease in a butcher, aged 46 years, dead after two years' illness, showing the usual course of symptoms. Tuberculin had been used in the treatment of the case, half a dozen doses having been given; but, as there was no reaction, it was abandoned. At the autopsy nothing tubercular was found, but the right adrenal was found much enlarged and apparently transformed into a hemorrhagic cyst, its contents having the appearance of a laminated clot.

TREATMENT OF FRACTURES AND DISLOCATIONS IN RELATION TO SUITS FOR MALPRACTICE.*

BY JOHN A. LEWIS, M.D., OF GEORGETOWN, KENTUCKY.

A SUIT for malpractice may follow the treatment of any ill to which human flesh is heir, yet the majority fall to the lot of the surgeon, and most of them the result of either real or imaginary deformities which occur in connection with the treatment of fractures and dislocations.

The passenger on the railway train who receives the slightest injury in being transported from one point to another, is sure to institute suit against the railway company so soon as he recovers his breath sufficiently to call a lawyer through a telephone; the employees on the railway, in the mine, in the foundry, in the factory, indeed employed in any capacity whatever, have ever present with them the hope of reimbursement for any injury they may sustain in any of their various pursuits. But above all the doctor, the custodian of life and limb, comes in for a double share of trouble along these lines. He is held to the strictest account of responsibility for sins of omission and commission; if his most delicate and difficult task be not performed to the entire satisfaction of not only the patient and his family, but of the entire neighborhood, he is promptly subjected to a suit for malpractice.

It is a well-known fact that the charity patient and the man who (though not an object of charity) never pays nor expects to pay a bill for medical services, is the man who more frequently than any other seeks redress at the hands of the law for unsuccessful treatment by the surgeon. This is one of the many ways which the "dead beat" adopts to escape the payment of a medical bill; by bringing suit he hopes to effect either a compromise, or to offset your bill by a *contra* one. It would be well for every physician to remember that the law holds him to the same strict responsibility in the treatment of the charity patient as it does in the treatment of the well-to-do.

In my estimation, ingratitude is the basest of all crimes. I know of but three classes of persons who go to their daily vocations unnerved by the hope of reimbursement in case anything should befall them while engaged in their own chosen fields of labor: The first is the aeronaut who performs his hazardous feats in mid-air on his trapeze bar, hanging from the tail of his balloon; the second is the preacher who breaks through the floor of his baptistry, nearly drowning himself, while making a sledge-hammer argument in his vain endeavor to arouse his sleeping congregation; the third is the noble-hearted and generous physician, who nearly or quite meets his death from septicemia resulting from an infected wound received while exploring a foul abscess in a charity patient. No damages for the last individual; the first two are consulting a lawyer who thinks they have a case.

Whenever the surgeon fails in any particular to put up a better job than the original one, they seize upon the flaw, real or imaginary, as a cause for legal action. But there is another cause for suits for malpractice of which I must speak—I do it with the blush of shame on my cheek—it is the jealousy between brother physicians who above all others should be true to one another. "Tell it not in Gath, sound it not in Askelon," that one physician should be the instigator of a suit for malpractice against a brother physician. By some of the mutations of time, a case which one physician has treated for fracture, dislocation, or other injury, comes under the observation of a brother physician; by inuendo, or by unfavorable comment upon the result, by some faint praise, he damns his brother. The suggestion has been made, this is all that is necessary, the injured party loses no time in consulting the devil's running mate, a briefless one-half for the other lawyer; they get up a case with the distinct understanding between lawyer and client that they are to share alike in the *here*, and (it is to be hoped) in the *hereafter*. A lawyer has been found to prosecute the case against the surgeon, and—who would believe it?—occasionally a surgeon is found who is willing to be a pliant witness in the hands of the lawyer. We have presented this pitiable picture—a lawyer for the prosecution, a doctor for the prosecution; a lawyer for the defense, and a doctor for the defense. Where is the doctor for the truth? Truly the "ox knoweth his owner, and the ass his master's crib." *Oh tempora, Oh*

* Abstract of a paper read before the Kentucky State Medical Society, 1902.

mores, "may my tongue cleave to the roof of my mouth, and my right hand forget its cunning," in the hour when I shall appear as anybody's witness save the truth's!

Do not understand me that there are no just suits for malpractice against physicians or surgeons—far from it; criminal ignorance, neglect, unfaithfulness, in consequence of which the usefulness or happiness and comfort of a human being is destroyed, should not go unpunished. Neither would I have you believe that the majority of our patients are not only ready but anxious to find some flaw in the treatment of their cases, which would justify them in bringing suit for damages. On the contrary, I gladly and cheerfully bear testimony to the generosity, the nobility and appreciativeness of the majority of those who call upon our profession for treatment of their many ills. But without question there are those, and they are not a few, who are glad of an opportunity to hold the physician responsible for some real or imaginary defect in treatment. They seem entirely oblivious to the difficulties confronting the surgeon, and do not recognize the fact that failure is not impossible even in uncomplicated cases. They ought to be made to understand how serious, how difficult and delicate a matter it is to treat even a simple fracture or dislocation, and how much more difficult to treat a serious and complicated one; how hard to make out the exact anatomical relation and the position in a bruised, swollen and distorted limb, whether the injury is a dislocation or a fracture, or both; how difficult to return accurately to its normal position, and how hard to maintain in position after the injury has been adjusted. They ought to understand that a surgeon is mortal, and like other men is fallible. The wonder is, when we contemplate the difficult surroundings, that failure does not occur oftener than it does. There are cases of simple fracture (notably oblique ones of some of the long bones) in which failure may follow treatment although the surgeon may have done everything which skill and faithful attention dictates; he may have recognized perfectly the form of injury; may have reduced and perfectly adjusted the fragments; skillfully supported the limb by properly applied splints; carefully and faithfully watched the injury through the entire course, and yet when the dressings are removed, he may find the result is not what it ought to have been, and not what he expected. And yet the surgeon should not be held responsible for the failure, unless a man should be held responsible for an impossibility. It is a well established fact that fractures of bones have occurred from muscular contraction alone; the patient must be moved for purposes of cleanliness and nature, and any movement may excite muscular contraction, may displace oblique fractures, after they have been perfectly reduced and splinted.

One other matter I will mention which the patient and his family should remember in making up their estimate of the surgeon's responsibility in treatment of these cases: The surgeon is not in the case of his own bidding; he has been selected by the patient of his family for his already known ability, or after inquiry and investigation. Those employing him know his calibre, whether he has any special ability or adaptation in treatment of these injuries or not; they had at their beck and call every surgeon from New York to San Francisco—why did they not secure the very best surgical talent in the land, rather than that which they employed? It was simply a matter of money and convenience. They take the risk, failure follows. Who is to blame? Certainly not the surgeon, unless gross neglect or carelessness can be proved. The truth is, the patient himself assumed the risk, failure followed, and he should blame no one but himself. The patient and the family should be made to feel in the employment of a surgeon they do so voluntarily with their eyes open, and must assume the risk.

In consideration of the many difficulties which environ the surgeon in his difficult and responsible task, that of treating fractures and dislocations, and the possibility of a suit for malpractice in consequence of unsuccessful results, what shall we do? And how shall we proceed to protect ourselves? In the first place no man who has not some special skill and training in this direction should ever undertake the treatment and care of this class of cases. If, however, you undertake to treat these injuries, then make up your mind to give those who fall into your hands your most skillful and painstaking and constant attention from start to finish. The time to make a complete and thorough examination of your patient is upon your first visit, at the time of the accident, when you will find the patient willing and anxious to take an anesthetic while undergoing examination; in a few days it may not be so. The muscles are more relaxed, there is less effusion, less induration, less fixedness, at the time of the injury than ever again. After you have examined the patient and made your diagnosis, it is important that you be perfectly frank and free with the family, tell them the exact nature of the injury and just what they may expect; do not be overconfident of results, guard your prognosis well. If possible have some honest practitioner, or better still, some intelligent and respectable laymen present, to hear your statement when made, and be sure you state the facts so plainly and so strongly as to impress the situation upon their minds. If you are uncertain about the form of injury, or about the proper method of treatment, call at once for a consulting physician, and tell the family you are unwilling to assume the entire responsibility. In selecting your methods of treatment use only the approved, make no experiments, the courts have held that a physician is liable for damages in case injury comes to the patient from use of some new and untried method, although the object and effort was to do good.

Fracture of the lower extremity of the radius (Colles fracture) is the form most frequently followed by imperfect results, and consequently the most liable to bring trouble. Next to the wrist perhaps injuries at the elbow are most liable to give trouble; mistake in diagnosis and treatment may result in imperfect and unsatisfactory results. In shoulder injuries we must again be very careful to make a clear diagnosis—fracture and dislocation must be differentiated. Injuries at the hip are always serious, and sometimes obscure. Serious oversights and mistakes are readily made in this region.

This paper would be incomplete if I did not mention the use of the X-ray in the diagnosis of obscure injuries. It is certainly the most important advance of the age along this line. We should never fail to avail ourselves of its aid in diagnosis in all obscure injuries whenever practicable; but suits for malpractice have followed its use, parties claiming to have been injured by too long or too powerful exposure to the ray.

Since any one of us is liable at any time to be confronted by a suit for malpractice, the question what shall be done to avoid trouble becomes a vital one. Many physicians and surgeons advise making yourself law proof by putting all property out of your hands. No man who resorts to this can maintain his financial standing in any community. Another class advise taking out an indemnity policy in some insurance company, you paying an annual premium, the company

agreeing to defend you to a certain amount in any damage suit which may arise during the existence of the policy. Just how efficiently and how faithfully they might defend the suit I am unable to say. Whether you resort to any of these expedients or not, I am sure you will find the following summary helpful:

(1) Do not undertake to practice surgery unless you have some training and skill in that direction.

(2) If you undertake it, leave nothing undone to secure success, from the day of your first visit to your last, when you remove the dressing.

(3) Never warrant results, let it be clearly understood that failure is not impossible even in uncomplicated cases after the most faithful and skillful treatment.

(4) Make your first examination just as carefully and thoroughly as possible under the circumstances; make a plain and truthful statement as to result of your examination, of trying nature of injury, etc., to the family, guarding your prognosis well; make this statement if possible in the presence of some honest physician or better still some intelligent layman.

(5) Let the patient and his family feel that in calling you it is presupposed that they know your ability in work in this line, if they are unwilling to assume the risk of the final results, then they ought to call some one else.

(6) After your first examination, if you are in doubt as to the diagnosis, or as to plan of treatment, call a consulting physician at once.

(7) In the treatment of charity patients and dead beats be especially on guard to protect yourself.

(8) Remember the law holds you to the same accountability in treatment of a charity patient as in treatment of the rich.

(9) Use only approved methods of treatment, leave the experimental treatment to the hospitals.

(10) Treat your brother physician exactly as you would have him treat you; never by word, or act, or look, lend countenance to the suggestion of a damage suit, it matters not whether the physician may be your personal friend or not. Express no opinion as to an unsuccessful result in any case treated by another physician unless he be present.

(11) If in spite of your best efforts to avoid a suit, one comes, never compromise or pay hush money—fight to the death. Ever physician should always stand ready to go to the assistance of his brother physician, with his time and money if necessary, in defending one of these suits for malpractice.

THE USE OF ELECTRICITY IN NERVOUS DEPRESSION AND PARALYSIS.

BY CHAS. B. BARRETT, M.D.

THE introduction of X-ray machines throughout the country has revived interest in the use of galvanic current and especially in insane hospitals, it use has been revived. Electricity has been a greatly lauded and a greatly derided remedy; it has been criticized for failing to do what should never be claimed for it, the graver forms of nervous disease. The suggestion of its use has always been present in the profession in nervous disease and it is well to decide just what classes of cases are benefitted.

There is no doubt that electricity has relieved pain, anesthesia, spasm and paralysis in organic nervous disease, but has not cured the disease, but we may ask what therapeutic agent or course of treatment has.

In the first place it is well to know what action electricity has on living tissues. It is a stimulant on all occasions, although it is uncertain to say how its occasional good effect in deep-seated organic troubles is produced; still this is unimportant if the results follows.

It is, however, in what are called functional diseases of the nerves that we get the best results from the use of electricity. The pathology of these conditions is yet uncertain, so it is hard to describe the process of cure. Yet this is no reason why electricity should not be used. Quinine was just as efficient in malaria before the pathology of malaria was discovered as now. Sunlight was known to be good for tuberculosis before we knew sunshine killed the bacilli.

It has been claimed that neurasthenia is lacking in distinctive features and is not a disease. This view of the condition is changing at present and undoubtedly the condition is a disease.

We know now that these patients do not recover unless treated definitely. A routine treatment accomplishes little in these cases, while to cure by mental impression is valueless entirely.

A neurasthenic patient may appear, from his general appearance, to be in perfect health; the nutrition may seem excellent and the weight may be increased. And yet, such a patient may be neurasthenic; having no reserve force and enveloped in morbid fears interfering with happiness and business. With this there is often a general hyperesthesia of the periphery with spinal tenderness. These sensitive areas are not stationary, but disappear and reappear at varying points.

Such cases are best treated by central galvanization and by general faradization. It is important what induction coil is used in these cases; as pointed out, the current from many induction apparatuses are not suited for sensitive and irritable conditions. It is well to remember that the galvanic current, no matter how produced, varies little in its physiological and therapeutical effects; the faradic current, on the other hand, varies so much upon nerve and muscle, that the physician cannot use too much care in the selection of such apparatus for his patients. Four induction cells, with each succeeding coil increasing in length as it decreases in thickness, are the best combination, making each coil, not separate but continuous. Producing a current of little quantity but great tension, it is possible to overcome any amount of resistance without exciting painful muscular contractions being produced.

What can we expect to do for a patient when he presents himself for treatment? Sleepless, morbid, filled with changing fancies, he probably complains of neuralgic pains throughout all his body.

In two months' time such a patient, under treatment by central galvanization alternated with general faradization, should improve considerably. He should be able to sleep without interruption, and his fits of despondency should come farther apart and be less severe. The neuralgic pains from which he suffers so steadily should almost entirely leave him, and all tremors should disappear. Neurasthenia has been neglected because generally the symptoms are so subtle and illusory that they suggest hysteria. It can manifest itself in so many different ways that unless one knows by experience, he would be surprised.

It is well to remember that long after the paralysis has disappeared, and the patient has recovered voluntary control of the muscles, yet they may refuse to contract to the direct application of the faradic current, as their faradic contractility is lost. Such patients as those with multiple neuritis of alcoholic origin, show this phenomenon. Besides other muscles, those of his legs were par-

alyzed so that he could not stand or move his toes in extension. Degenerative reaction was very marked. The muscles of the leg are now very well developed, and the patient has perfect use of them. The extensors of the toes contract with the galvanic current, whether applied to the external popliteal nerve or to the muscles themselves. The faradic current applied to the nerve also causes the extensors of the toes to contract, but when applied to the muscles themselves as strongly as the patient can well bear, there is no contraction of these muscles. Now, it is obvious how such a fact might enable us to a conclusion about the nature of a paralysis that had long been recovered from. After violent shocks to the spine, when they rapidly lose all power of replying to either the faradic or the galvanic currents, and yet they may be made to contract by direct blows upon them. This has been observed in some cases, years after recovery from Bell's paralysis, the eye that was paralyzed winks less frequently than the other, its reflex movements being less easily aroused. Various degrees of severity are seen in facial paralysis, and an effort has been made to classify them into mild, medium, and severe cases. In cases where the paralyzed muscles continue to contract with the faradic current after ten days or so, a comparatively rapid return of voluntary power can be expected. If, after two weeks, the faradic contractility is entirely lost, and degenerative reaction established as in this case, the patient must expect to remain paralyzed for several months. If the degenerative reaction disappears, and even after the lapse of some time does not return, the prognosis as to ultimate recovery is bad. Warn your patient that when she does get well the now paralyzed muscles may become contracted, so that the eye may look smaller and the face be drawn to that side. This is important for your own professional safety.

Where the trouble has been caused by exposure to cold, and the case is seen shortly after the paralysis has appeared use means directed against the neuritis which has been the cause, such as leeches to the mastoid process and warm applications, with every precaution to shield the face.

Iodide of potassium is an excellent drug to help absorb the products of the neuritis in the early stages. The galvanic current is, after all, the sheet anchor. The majority of such cases get well, even if left to themselves, but they will recover more rapidly with the aid of galvanic current. Some cases exist where the use of the current may turn the scale in favor of recovery, which might not otherwise have appeared. The current should be passed in several directions. In the first place pass the current as near as possible to the seat of lesion, the beneficent action of the galvanic current upon the injured portion of the nerve is obtained. Place one pole —the anode, by preference—over the auditory meatus or mastoid process of the paralyzed side, and the other on the corresponding point opposite. Use quite a weak current, or disagreeable giddiness in the patient will be produced. In using the galvanic current be guided in the strength applied by the feeling of the patient, it being rarely, if ever, necessary to use it to give annoyance. The most general manner of using the current is to place the anode over the mastoid process and to sweep the cathode slowly over the face in the directions in which the branches of the facial spread out in the eye, the upper lip, the lower lip, and the chin. One application daily is sufficient, and the time of application may be from five to fifteen minutes at a time. The use of strychnine is of no especial value in these cases. Get your patient accustomed, after vivacious talking and laughing, to replace with the hands the muscles which have been dragged over toward the sound side, putting them in their natural position of equilibrium and repose. In very bad cases the mouth is much distorted; some authorities suggest the arranging of a hook (made by bending down the curved end of a hairpin) in the angle of the mouth on the side paralyzed and attach it to the ear of the same side. Sometimes when the eye has been much irritated, and the patient compelled to be in an irritating atmosphere of smoke and dust, it is well to hold down the upper lid over the ball and fix it with a strip of court-plaster, removing and renewing it at pleasure. A similar method of procedure can be followed in other forms of paralysis and neurasthenic states. In paresis lately galvanism has been used greatly with excellent results.

In taking up facial or Bell's paralysis, it is well to observe that all the muscles of the affected side of the face may not be disturbed by any muscular effort. Studying the anatomy of this part we see the muscles of the skin are supplied by one nerve, a branch of the seventh pair; lying in a bony canal of some length (aqueduct of Fallopius), winding through the petrous portion of the temporal bone from the internal auditory meatus within to the stylo-mastoid foramen. Even a slight neuritis, accompanied with swelling, or an effusion from the blood-vessels, on account of the unyielding walls of the bony canal, produces pressure upon the nerve. Pressure disturbs the function structure of nerves. It is easy to see why this seventh nerve suffers very frequently when other nerves escape, and is more commonly paralyzed than any other nerve. As a rule the patient cannot contract the brows on the affected side, nor close the eye, nor expand the nostrils, nor more than feebly alter the position of the lips, as in whistling, showing the teeth, etc. Trying to close the eye the upper lid falls down a certain distance over the ball of the eye, but a wide space is left between it and the lower lid, while the ball is rolled up beneath the upper lid, so that even in sleep the eye remains unclosed, which constitutes a very important symptom, enabling us to distinguish this paralysis from the more serious paralysis produced by cerebral lesion in which lesion the muscles of the brow and about the eye escape one.

The failure to close the eye voluntarily is due to the paralysis of the orbicularis palpebrarum, which prevents the patient from winking. Although the touch is felt as distinctly as it would be on the uninjured eye, the patient cannot close his affected eye. Taking a galvanic machine and watching the effect of the poles upon the extensor muscles of the forearm, we find that if we place the anode sponge on some spot at a distance from the forearm and touch the skin over the extensors with the cathode sponge, at the moment of contact—*i. e.*, at the moment of closing the current—you see that the extensors contract with a short, sharp jerk, immediately followed by relaxation, the muscles remaining quiet although the current is passing continuously through them. Remove the cathode and still the muscles are unmoved, but place the cathode on an indifferent spot and touch the extensors with the anode. There is no contraction of the muscles, although the circuit is closed and the galvanic current passing through them. On raising the anode, and thus breaking the circuit, the muscles contract. This, then, is the law of galvanic traction for healthy muscles; cathode-closing circuit upon nerve and muscle causes contraction, anode-opening circuit upon the nerve and muscle causes contraction, expressed by letters, C.C.C. and A.O.C.

Taking paralyzed muscles and applying the galvanic

current to them, begin with a very weak current, on the paralyzed muscles and they contract. The paralyzed muscles that could not be made to contract by the faradic current will contract when the galvanic current is applied only, but that they are made to contract by a current too weak to move the healthy muscles of the opposite side—they are more sensitive to the galvanic current than healthy muscles, there is a quantitative change in contraction. The manner of contraction of these paralyzed muscles is different. Instead of the short, sharp contraction followed immediately by relaxation, seen in healthy muscles, a slow, lazy, peristaltic contraction, which slowly relaxes, appears. This degeneration of nerves and muscles and degenerative contraction never follow a cerebral paralysis, nor is it found in paralysis from a transverse myelitis, which simply cuts off influence from the muscles. To produce it the lesion must be either in the nerve-trunks or in those large nerve-cells in the anterior horns of the gray matter of the spinal cord, or those of the nuclei of the medulla oblongata, to which each motor nerve fibre is immediately joined, and the influence of which cells is necessary for the nutrition of the nerves and muscles.

Another deviation from the healthy law of contraction is also seen. Instead of the application of the negative pole (C.C.C.) causing the most active contraction, the application of the positive pole (A.C.C.) is just as efficient. A greater effect from the anode than from the cathode may be seen making a reversal of the normal electrical contraction of the muscles.

The muscles undergo peculiar changes in paralysis so that various forms of head-pain, noises in the ear, atonic voices, deficient mental control, hopelessness, morbid fears, and a host of other symptoms appear.

It is well known now that electricity not only greatly aids the action of other remedies, but it not infrequently cures when many other methods have been of no avail. While neurasthenia is often conquered by the judicious application of electricity in lithemic condition of the system, faults of assimilation that are so readily mistaken for neurasthenia, electricity is not so good. The presence of uric acid in the urine is not sufficient, for uric acid is sometimes found in neurasthenic patients and is not at all times found in lithemia. The mental phenomena differ, in the lithemic and the neurasthenic condition, for while they suffer from mental depression and a profound sense of misery, it is much more marked in the former than in the latter state. The neurasthenic suffers from the deepest melancholy. He rarely becomes a victim of irritability and unreasonable outbursts of temper such as the man whose brain is actually poisoned by imperfect digestion. The neurasthenic at times is extremely irritable, but this irritability is more passive than active and his demeanor manifests but little tendency to make those dependent upon him miserable. The mood of the lithemic, on the contrary, lasts for weeks. Due to actual toxemia, it is generally accompanied by obstinate constipation.

In intestinal and liver derangements the nitrogenized waste circulating in the blood causes, by its irritation, tonic spasm of the arterioles, produces cold hands and feet. The condition of the tongue is an important diagnostic sign. In lithemia it is coated far more frequently and to a greater extent than in neurasthenia, although in some cases of lithemia the tongue is but slightly affected. It may appear at the first sight perfectly normal, and it is only when looked at carefully from the side that an unnatural brownish color is observed. It is in such cases as this that mistakes in diagnosis are frequently made. As regards the pulse it may be said that in lithemia it is slow rather than fast, and in neurasthenia it is rapid.

There is certainly no absolute standard of diagnosis in the various forms of electricity, but in those cases where morbid fears predominate central galvanization or simple galvanization of the brain is especially indicated. With these symptoms we have mostly cerebrasthenia, or brain exhaustion, and under the influence of this exhausted condition the emotional nature overcomes reason and will. Galvanization of the brain does not show immediately, but slowly its beneficial effects are detected, while in neuralgia electricity is one of the most efficient remedies that we possess.

Electricity may fail to relieve in some practitioners' hands while it proves effectual in the hands of others, owing to the inability to differentiate between the two forms of electricity required. In one case the faradic current may be indicated, in another the galvanic. Cases not infrequently occur where one current accomplishes good and the other only evil. This is because they so thoroughly differ in their action on living tissue. When, therefore, a case of pain of a neuralgic type presents itself for treatment, the question is not only whether electricity should be used, but what kind of electricity, and what method of application.

THE MAINTENANCE OF CARDIAC COMPENSATION.

BY G. R. JOHNSON, M.D., PHILADELPHIA.

SCHOTT, who has done a great deal of admirable work in the treatment of heart diseases, has pointed out that cardiac neuroses are becoming more common and also the combination of neuroses with organic disease. He divides these cardiac neuroses into three large classes, viz.: the secondary neurosis; the motor neurosis and the neurasthenic neurosis. Secondary neurosis he again divides into three subdivisions, which he names, pseudo-angina, vaso-motor-angina and true angina pectoris.

He describes the characteristics of "pseudo-angina," or nervous angina, as being shooting, stinging pain in various parts of the cardiac area, together with a feeling of contraction of the chest and occasionally a sense of numbness and formication. He believes this form of affection is found generally in young people. It is due to inheritance, chlorosis, gout, syphilis, pleuritic or pericardial adhesions from strain and such poisons as tobacco and lead. Schott believes that tobacco and lead may lead on even to genuine angina. He describes the vaso-motor form as presenting in addition to these symptoms, those which are due to spasmodic contraction of the vessels and reflex elements. Intense visceral pain, anxiety and feeling of impending death are the characteristics of genuine angina, which is commonly not seen until the age of 40. A true angina is sudden in its onset, although occasionally it is preceded by an aura which may last a few hours or a few days. The patient must stop if he is walking and must remain motionless and when the attack is over he walks with an anxious gait. He is afraid to breathe, but he is able to breathe, as Schott pointed out. The pulse is not normal but rapid and feeble and the cardiac beat may be difficult to feel. Schott believes that during the spasm that takes place, a dilatation of the left auricle occurs and that the left ventricle may subsequently dilate and thus enlargement of the heart follows.

Under the head of the motor neurosis of the heart he places muscular and nervous overstrain, but it is diffi-

cult frequently to decide whether this is due to the central or peripheral nerves or the excito-motor-ganglia.

The neurasthenic division is composed of two stages, the excito-motor period and the period of depression and the causes which may lead to general neurasthenia are likely to produce neurasthenia of the heart, although we must be able to decide between this nervous weakness and muscular cardiac weakness. In the excito-motor period there may be every form of decreased and increased or irregular symptoms, but the intermission of the heart beat is the principal symptom.

Sansom has also dwelt upon the importance of studying the nervous disorders of the heart and he believes it is especially necessary to study the movements of the eyes and eyelids, the auditory mechanism and the nasopharyngeal tract, as well as the pulse, the heart rate and the heart beat. He has been able to notice a marked tremor in many cases of tachycardia when the patient is directed to close his eyes quietly, and there is an inequality of the pupils, which has not been explained by organic causes, but which disappears when other disturbances of function go.

Babcock has taken up the dietary of heart disease. He studies the question of feeding an overtaxed heart without oppressing and enfeebling the function. He believes that in a complication of nephritis a milk diet is necessary and that in arterio-sclerosis the solutions of calcium should be avoided. Frequent, light supplies of food are necessary undoubtedly to prevent imperfect nutrition of the tissues from an impaired arterial system.

The question has arisen whether the use of serum treatment in endocarditis can be of value. Wright has reported a number of cases in which the anti-streptococci serum has been used. Bruce also reports two successful cases. Moritz reports the first case in which ulcerated endocarditis was cured by anti-staphylococcic serum. The history of this case is interesting. The patient, 22 years of age, was admitted to the hospital in January. A diagnosis of malignant endocarditis was made. Moritz decided to inject anti-staphylococcic serum. The acute symptoms disappeared after he had injected 5 c.cm. of the serum. The patient's temperature was normal in two months' time.

Boix believes that the proper treatment of this condition is the use of a compound sera which he would derive from animals infected with various kinds of streptococci, and he gives a description of experiments at the Louvain Laboratory in five different kinds of serum in a mixture that was injected into horses.

Sansom believes that massage of the chest, gently performed, is very valuable in the stage of returning compensation, care being taken that the patient, when able to walk about, warmly clad with a woolen material next the skin, left uncolored. He recommends the use of iron, in the form of tincture of the perchloride, or syrup of the phosphate, or hypophosphite, in these cases, combined with cod-liver oil. Arsenic is indicated rather than iron in those cases which show much nervous perturbation. Again, in these cases small doses of tincture of nux vomica or strychnine may be added advantageously to the treatment.

The question as to the different treatment of simple hypertrophy and of hypertrophy with compensatory dilatation is important. What are the measures which develop compensatory hypertrophy of the heart? Also, when compensation has been established, patient being clear of symptoms, how can this conservative enlargement be kept up? It must consist in actively carrying out certain rules of life and methods of therapeusis. It should be negative, as far as avoidance of certain unfavorable circumstances is concerned. Healthy blood in the coronaries must be secured by perfect hygiene, which includes the diet and attention to the bowels and skin, and the use of tonics, such as iron or arsenic.

The nervous influences should be kept wholesome, and the question of education in case of children being constantly remembered. Exercise must be definitely ordered and carefully supervised. The occurrence of acute disease, especially rheumatism, must be guarded against. Should there be failure of compensation with cardiac dropsy, then the selection and employment of cardiac tonics and diuretics is most important.

Medical literature is unusually clear in the list of established remedies for cardiac failure, and in the suggestions of the management of this condition. Romberg has studied the question of the innervation of the heart and has formed from observation on the condition of the heart in fever, and in the development of the nerves, ganglia, and musculature of the heart in the embryo, that the myocardium itself, not the ganglia, is the automatic motor of the circulation. He regards the functions of the ganglia as sensory in function, transmitting "unconscious impressions" to the central nervous system. If Romberg's view is correct, the myocardium becomes of greater importance.

When it comes to the selection and employment of remedies Nothnagel, who is the greatest living authority on this subject, states the comparative value of the different drugs and methods in ordinary use, other than digitalis, as follows: The remedies he considers to be inferior to digitalis are: Convallaria; adonis vernalis; squill; sodio-salicylate of caffeine, 3 to 6 grains, five times daily—a diuretic for days when digitalis is not administered; absolute milk diet; tincture of strophanthus, 8 drops, twice or thrice daily for fourteen days. Nothnagel believes, as is generally accepted in Germany, that a direct influence on the kidneys is effected by calomel given in doses of 3 grains four times a day for three or four days, with precautions. After the administration of calomel, diuresis may arise on the fourth or fifth day—often only after a second attempt—from 300 to 3,000, or even beyond 7,000 c.cm. Dropsy disappears for from four to eight weeks, when the remedy must be resumed—this occurring as many as eight times in the course of a year. He would avoid powerful thermal carbonic-acid baths, which excite the heart. Carlsbad treatment may be used with great caution if thought necessary. Chalybeate waters are contraindicated in heart disease with cyanosis. He believes that massage and dietetic regimen are the beneficial side of bath treatment. As long as compensation is preserved, cold-water treatment is admissible, avoiding too low temperatures (57° F. and under). For mental anxiety, restlessness, and neuralgic attacks Nothnagel gives morphine subcutaneously ($^1/_{12}$ gr. to $^1/_7$ gr.); he uses it also as hypnotic, when paraldehyde, amylene hydrate, sulphonal and chloral have been unsuccessful.

Ballint, a German investigator, has done a considerable amount of experimental work in studying the causes of loss of compensation. He produced artificial lesions of the aortic valves in dogs and watched the animals closely until death ensued. He found that invariably cardiac hypertrophy appeared, apparently depending upon the increase of work. The average weight of the normal dog heart was 9.71 gm., while in hypertrophy it ran up to 16 gm. Yet despite the lesions, loss in compensation was not great unless the vagi were cut. He came to the conclusion that lesions of the nervous mechanism are of the greatest importance in causing loss of compensation.

Wood has a rather novel theory on the action of digitalis on the heart; this drug, he believes, does more than stimulate the heart. He believes it is a cardiac food rather than a stimulant. With this view it is easy to see how digitalis does good. A heart overworked from valvular disease is a starved heart. The cardiac walls feel the failure in the circulation more directly than it is noticed in the periphery of the body—in making an overworked and underfed organ. Restore that heart to the normal by digitalis, and as the current rushes out through the aorta it nourishes the cardiac walls. When the heart contracts in spasm, it forces out the juices from the myocardium, and makes a clear open space for the blood to flow in and feed it. The temporary beneficial good done by digitalis in such cases is due to its restoring the balance of the circulation, while its permanent effects are attributable to the rest and food it brings the heart. But Gaskell believes that digitalis goes beyond this. He has shown, as pointed out by Bauce, that "the pneumogastric nerve is a trophic nerve of the heart; that during the inhibitory period there is both rest from function activity and activity in structural change. During cardiac systole the heart puts forth energy and destroys its own structure; during diastole it not only rests from functional activity, but is engaged in building up its own structure. Systole is destructive to the heart, diastole is constructive to the heart. A long period of diastole furnishes an increase in the structural activities of the heart." Not only cessation from worry, not only overfeeding instead of underfeeding, but also an intensely stimulated structural activity follows the use of digitalis.

Axford, in an interesting paper on surgical interference in certain cases of dropsy, believes that the anasarca or edema involving principally the lower limbs, depending on valvular disease of the heart or chronic nephritis, has not received proper surgical attention. He suggested that there are three methods of drainage to be considered, viz., incisions over the malleoli, capillary tubes, and multiple puncture. If free incisions are made, two or three inches long, into the cellular tissue over each malleolus, and the patient is put in a semi-upright position, immense quantities of serum will drain away, followed by great relief.

These incisions serve to drain both the cellular tissue of the extremities and empty such cavities as are filled with fluid. Unfortunately usually the patient objects to the operation, an anesthetic is dangerous, and another objection exists in the fact that the wounds do not heal nicely. So the simplest and best procedure, is "multiple puncture." The patient is placing in a reclining chair, so that his legs and feet are in a tub containing a few inches of tepid water. Grasping a sharp bistoury, the surgeon makes from ten to fifteen rapid punctures of the skin below the knee on each leg. Allowing the weight of the hand alone to send the knife to the requisite depth. As soon as the cellular tissue is opened, a small slender stream oozes from each puncture. Towels wet in tepid water should be applied to the legs to keep up the flow. When the serum has been drained away, the wounds, which are hardly perceptible, will heal promptly. Axford found multiple puncture did not fail in cases of edema of cardiac or renal origin.

Marked and great relief frequently followed this simple procedure, although only a temporary expedient. The strictest antiseptic precautions must always be carried out, both before and after the operation. The dressings being some form of antiseptic material, such as a salicylic wool supported by an antiseptic roller bandage, and changed daily. The patient should occupy a large easy-chair, in preference to bed.

This plan of puncturing the lower extremities should be avoided, as a rule, in a child, for there is in the latter so much tendency to move and chafe the lower limbs, that irritation of points of puncture is readily brought about, with resulting discomfort.

THE EFFORTS MADE TO DISCOVER THE NATURE OF CANCER.

BY A. M. LEONARD, M.D.

ONE disease after another has had its cause made clear since the development of the studies and discoveries in bacteriology. Diseases considered infectious and those not hitherto regarded as infectious have been brought within its range. We now know their cause is a coccus or a bacillus. Tumors alone have remained unsolved, and no one has been full able to pronounce the carcinoma and sarcoma infectious. The clinical indications which indicate the possibility of their inoculation, depends on uncertain data. Yet there are authentic cases of the spread of carcinomatous growths after tapping of the abdomen for the withdrawal of ascite fluid, while epithelioma has spread from the under lip to the part of the upper lip directly in contact, while such observers as Von Langenbeck, Lebert, Weber, Follin and Goujon report that they succeeded in transferring carcinoma from man to animals, or from one animal to another; other observers have had only negative results in similar experiments, so that the greatest doubt still exists. Recently Gaylord has endeavored hard to revive the parasitic theory of cancer, but his results as yet are not universally accepted.

In taking up the development of cancers, Alexandre starts with the theory that there existed a constant and regular increase of white corpuscles, of a perverted character, prior to their appearance. He believes that the history of the origin of the pathological new formations would then agree completely with the normal growth, or at least the pathological process would no longer be regarded as something wholly different from the physiological development. In the normal state, repair, and possibly part of the growth of epithelial tissue, is accomplished by corpuscular elements, from the blood,—white cells coming out from the capillaries wander through the connective tissue, reach to the basement membrane, pass through it and appear first as germinal epithelial cells. Alexandre states that this process cannot be studied in the normal, for the rate of growth is so slow; but when great activity, such as seen in inflammation, appears, repair of waste can be demonstrated. Now, quoting from Alexandre, let us suppose a cancerous tumor to be on the point of development, with the blood containing an increased number of white cells,—the increased number of which, at least, are potentially epithelial in character. A local irritation occurs to determine the seat of the tumor formation, and at this place the wandering (epitheliod) white corpuscles are detained and prevented from passing through the basement membrane. They start to grow in the epithelial connective tissue, and the outcome of their growth is an epithelial tumor,—a gland-celled or squamous-celled carcinomatous new formation. The epithelial cells grow down there, and growing spread through the connective tissue, as we find them, but trying to imitate, as closely as their unfavorable situation will admit, the normal. This theory brings the pathological into entire accord with the physiological and the cancerous tumor is defined as a growth of the epithelial cells *out of place*. The greater malignancy of the carcinoma over the sarcoma is also explained—the sarcoma is growing *in place*, that

is, growing, as we always find it, in the connective tissue group of structures." This makes the condition of the blood important from a double point of view: In the first place for diagnostic purposes in those obscure gastric and hepatic cases; secondly, as an assistance in forming creditable theory of the origin of cancer. If it is shown that prior to and during the development stage of the cancerous tumor the white cells were increased, this would go render it probable that the epithelial and glandular carcinomatous growths owed their origin to and derived their formative cell elements from the white corpuscles of the blood. Consequently in gastric cancer dyspeptic irritation would not be the cause, or in tumor of the mamma, an injury compelling the epithelial cells to change their nature and wander back through the basement membrane on which they have been growing, or as causing the subepithelial connective tissue to commence growing to form a cancer.

Alexandre's enumerations of the white corpuscles must be carefully considered. Sis thousand is the mean in each cubic millimetre in the normal state, according to this authority, and 9,000 the maximum physiologically. If more than 10,000 are found, he regards it as leucocytosis. Many authorities believe their figures to be too high, for while these numbers may be reached in healthy conditions, it is transitory only. Should 9,000, or even 8,000, be maintained constantly the condition is regarded as a leucocytosis by many. Alexandre has examined 46 cases, involving 16 various organs, and in all stages of progress of the growth, of ulceration, and even after removal of the tumors; in 14 cases of the mammary tumor the average of white globules was 11,464 to the cubic millimetre; the highest was the enormous figure 21,700, and the least 7,370. In other varieties of tumors they show, in the main, an excess of white blood cells. Epitheliomas were an exception to the rule, for only under peculiar conditions was augmentation seen. It is also sufficient to note that removal of the tumor by operation in six cases was followed by a diminution of the white corpuscles.

Schill and Scheurlen have been experimenting for twenty years on the bacillary nature of cancer. Scheurlen experimented on dogs, injecting cultures into the mammary gland. Within 14 days a tumor appeared the size of a walnut of soft consistence. The autopsy of two dogs, one on the 28th and the other on the 35th day, which had died from the injection, revealed a tumor the size of a hazelnut firm in the adipose of the breast, not attached to the skin, from which it was doubtful whether it had originated from lymph gland or from the tissue of the mammary gland. The cell growth was enlarged, granular cells being seen which here and there deserved the name of epitheliod, and in which could be recognized the shining spores as in cancer. Microscopically, just as in the cultures, he recognized the carcinoma bacilli.

Scheurlen comes to the conclusions: (1) The constant production of the bacilli by means of pure cultures; (2) the constant proff of spores of this bacillus in microscopic preparations of the morbid products; (3) the result of experiments on animals that this bacillus stands to carcinoma in the causal relation, that this is the cause of carcinoma.

Schill, as far back as 1887, thought he recognized sections of tissue as well in scrapings of the juice, microorganisms which looked like matches with heads at each extremity. Bacilli with dark-stained dots in the middle, or with a row of points found through the crystal clear thread were seen. In sarcoma Schill found bacilli of the same character, only considerably smaller in dimensions than in carcinoma. "From the same sarcomatous tumor the author grew a mould fungus (schimmelpilz), which at the temperature of the room in 10 p.c. nutritive gelatine, formed in the deeper part a pure white radiating branched mycelium and on the surface a bluish-green turf of spores. The mycelium form threads with branches almost at right angles and with septa at regular intervals. The threads give after a limited period of growth, after staining with fuchsin and carbolic acid, and bleaching with acetic acid, the following appearance: In unstained thread-tubes are numberless intensely red stained points, connected also by a crystal clear body. These red points are partly along the inner side of the mycelium tube, partly in its center, placed at one time in the long axis of the fiber, again transversely. The spores formed on the surface of the gelatine have a short cylindrical figure with slightly pointed ends. The author thinks, as the result of cultures from the carcinomatous tissue, that the carcinomatous bacilli, as he described it, is not a true bacillus, but most likely a stage of growth of some fungus."

The results in all the reëxperiments are still immature. Berlin did not believe that Scheurlen produced, by the injection of a culture growth, a pure or impure, a granular carcinomatous tumor in the mammary tissue of a dog, for as they pointed out finding epitheliod cells, even when with spores and bacilli, does not complete the picture of a carcinoma.

English observers have been working on the microparasite theory. No one has yet found micro-organisms which admit of being cultivated from malignant new growths on any of the chief media; still, many believe, nevertheless, that the parasite theory, in some form or other, is the most probable.

The two factors in every specific disease are the constitutional disposition and the micro-parasite. Allowing that the parasitic theory is correct the relative importance in cancer of the personal element and the infective agent is not clear as yet. In malignant tumors, these writers claim it is the infectiveness that constitutes the important point of the disease. Its character is plain in the local invasion of the tissues around by the morbid growth, in the secondary implication of the lymphatic glands in anatomical relation to the tumor, and in the general infection internally. Rapidly disseminated peritoneal sarcoma may be scarcely distinguishable from those of tubercle by the naked eye. Secondary disease from the transference of elements from the primary tumor is shown in the likeness between the secondary growth and the first. The questions at issue are undoubtedly: (1) What is it that gives rise to the unnatural epithelial overgrowth in carcinoma? and (2) what leads to the elements transported along the lymph channels to continue their abnormal growth, and serve as sources of a tertiary series of tumors? The transposition of a normal cell is not enough for the growth of a tumor; young transplanted tissue will grow for a while, and atrophies. Epithelium grafted on granulations does not pierce the deeper tissue, but grows as squamous-celled epithelium. The cells grow according to their natural capacity and somewhat as the physiological requirements of the part.

Creighton's theory, which is not well accepted, is that the diseased cells exercise a spermatic influence on the tissues around the elements which they excite to multiply and assume characters similar to themselves. The manner of the acquirements of this spermatic influence is not proved.

Paget believes that there is a likeness between some of the specific and micro-parasitic diseases. He deplores

the insufficiency and inaccuracy of the definition of tumors, for so many tumors are on the border lines verging toward other forms or even to normal tissues. The cancer, imitating in some degree the natural structure, seems "growing as if with a self-possessed power of maintaining and increasing itself." Their growth is not "in evident adjustment to the plan of other parts, and is not subject to the general control which in health keeps each part in useful association and concurrence with every other." He has characterized the method of growth of innocent and cancerous tumors alike as purposeless and selfish, indicating a close affinity between them, and this method "is rarely seen in any other disease than these and some specific diseases." Paget believes "the degree of malignancy usually corresponds with the degree of unlikeness to the natural structures" in which the growth is situated. He sticks to this old definition of specific diseases made thirty years ago, as those "in each of which the phenomena of common diseases are modified in some constant and definite manner which gives them what we call specific characters. Thus each specific disease is due to the influence of a distinct morbid substance on some part or parts at which the characteristic signs can be and are manifested. Two conditions must coincide in each; the one general or diffused, in a morbid material in the blood; the other local, in some part with which this material produces diseases." He uses the vague term "morbid substance" to avoid definition or exact description, but says that "the reasons are, indeed, constantly increasing for the belief that each of the many specific diseases is due to morbid changes produced directly or indirectly by a distinct species of minute parasite, or some other vegetable of lowest organization, yet specific. I believe that micro-parasites or substances produced by them will some day be found in essential relation with cancers and cancerous diseases." He would place cancer in the group "that includes, as its chief members, syphilis, tuberculosis, glanders, leprosy and actinomycosis, each of which is known to have a distinct micro-parasite."

Paget cautiously refers to the cause of cancer as a "morbid substance," pointing out the most important general agreements of cancer with the other members of the group, *viz.*, tubercle, syphilis and others. And first these are placed by Virchow among the tumors, as granulomata, and many of the group deserve this name equally with certain carcinomata. Then all of them tend to degeneration and ulceration, special and characteristic for each. The infective propensity which all of them exhibit by their invasion of the adjacent parts through varied channels, "is evidence enough of essential likeness and close affinity in tuberculosis, syphilis, leprosy, and the rest; and as we know that there is for each a specific morbid material in the blood, so we should believe that there is at least one in cancer and cancerous diseases." The same argument is applied to the specific fevers. Paget has studied the likeness found in vegetable pathology. For example, in the xylomata he finds the best evidence—nearly proof—of the truth of one of Cohnheim's explanations of the origin of tumors from portions remaining undeveloped. The woody tumors are from buds, or "sleeping eyes," which have been "overgrown" by the normal structures. The only likeness to these woody tumors, so-called, which is found in our tissues are the dermoid growths. But the dermoids arise from germinal tissue, not merely "remaining undeveloped," but growing "out-of-place;" whereas, the buds, or sleeping eyes, of a xylomata are only parts adventitiously covered over—not out of place. If the bud is released, it will grow into a normal structure—a fact which cannot be predicted of the dermoid tissues. The one does not grow because it is infolded; the other would not grow, but waste away, unless it were infolded. "Galls illustrated the influence of a virus in exciting morbid growths;" and while the gall growth is not wanting in specific appearances, it is deficient in the virus. Since it is difficult to suppose that the physiological process of egg-laying is attended with virus, the eggs cannot be looked at as "pathogenetic." It is more like a local mechanical hurt. Although there are more than a thousand forms of galls known, each produced by a distinct insect, and therefore specific, galls can also be formed by non-specific agents, for which it is not supposable even that a virus could be present. Something other than similarity is necessary for specificity. Galls are certainly not infectious, according to Paget's definition, since they do not spread "through the lymph spaces, the lymphatics, or the vessels"; nor can they be said to invade the adjacent parts. And this is infectiveness. They also fail to show infection, in that galls do not make the oak tree "ill" or diseased.

Paget's argument serves as well if cells are substituted for the bacillus as the efficient producing force. "When a cancerous tongue infects the buccal mucous membrane we may be sure it is done by a transference of cells; and when the mammary tumor gives rise to an hepatic cancerous nodule, it is open to observation that it has been transferred, since the malignant cell, so-called, can be seen obtruding itself and displacing the normal hepatic cells. Turning aside from the micro-parasitic origin of tumors does not compel a belief in their spontaneous development. Other forces can play in our environment and disturb the physiological growth; otherwise it would become necessary to suppose a bacillus acted to carry on normal existence. Life is modified and changed to a degree comparable to disease by the environment, but without disease and without a bacillus."

SIGNIFICANT SYMPTOMS IN GENERAL PARESIS.

BY M. E. FITCH, M.D.

AS it is well for the general practitioner to know the symptoms of general paresis, for it is usually only in the stage in his hands that the disease is curable, I will endeavor to present a number of significant symptoms generally overlooked, which occur during the course of this disease.

Among the early symptoms of paresis is severe headache, which is generally neuralgic in character and at times associated with tenderness and a feeling of lightness. When the disease is of the tabetic variety severe frontal headache is present. It may be so great that he may rub the hair from the frontal region or from one side of his head in his efforts to rid himself of the pain. Later on in the disease, no matter what is the form of the paresis, the headache is apt to disappear.

Again, there is in paresis a loss of the special sensations, and especially impairment of the sensibility of the skin. This loss of sensibility of the skin is generally most pronounced on the front of the chest, on the lower and upper limbs and on the face and hands. This lack of sensibility consists not only of the loss of the feeling of pain but also the loss of the thermal sense. Of course, loss of special senses in the form of that of the eye is well known in general paresis; this constitutes the well-known Argyl-Robertson Pupil, but the loss of other senses are also of common occurrence. Deafness, loss of control of the muscle of swallowing and eupena. A patient has been known to strangle to death from food

lodging in the trachea without his knowledge. Loss of the olfactory sense is also common, as well as that of the sense of taste. Color blindness and visual hyperesthesia may also exist. This loss increases in extent as the disease goes on and is undoubtedly due to the degeneration in the centers in the brain of the special senses as well as in their terminal nerves.

Another curious symptom which occurs in general paresis is the changes due to lack of nutrition. The nails are apt to become extremely brittle and fissured. The points of the body which are exposed to contact, such as the knees, buttocks and elbows, are liable to ulcerate. The hair frequently suffers, becoming brittle and scant. The weight even of the bed sheets seems to have produced at times ulcerations. Of course, muscular atrophy is not at all infrequent, and the muscles may take the form of pseudo-hypertrophy, showing fatty infiltration with a wasting of the muscular tissue. This condition extends also to the bones and they become infiltrated with fat. It is well to remember this from a medico-legal aspect, for the bones become very brittle and they break on the slightest provocation. The skin loses its healthy appearance and looks uncared for.

This question of the fracture of bones in general paresis is a very interesting one. Not only is there a deposit of fat in the haversian canals, but owing to the absorption of the organic constituents the bones become doubly brittle, while the patient being deprived of the protection of reflex action, cannot guard himself very well from danger, so that he is doubly exposed to accidents. Again, the impairment of his nerve forces deprives him of the sense of pain so that he may have a severe fracture and show no sign of suffering. This has been so bad that spontaneous fractures have been known to occur without any complaint on the part of the patient. In insane hospital practice it is well known that physicians are obliged to be especially careful in the care of these cases. It is especially during the middle course of the disease, when the patient is up and able to be around, that these accidents are likely to occur. Again, as pointed out by Clouston, a large number of rib fractures in general paresis is due to the fact that the laryngeal muscles do not act in time to close the lungs and in this way make them resisting by filling them with air which canot be expelled. He cites a case in his report, of a patient who was admitted to the hospital with a number of broken ribs on either side, and who, in his struggles, showed a total absence of ordinary feeling clearly demonstrating a condition of dulled sensation.

The condition of the blood in general paresis shows, invariably, a diminution in the hemoglobin. Later in the disease the blood becomes fluid and coagulates very slowly. Outside of this there is nothing specially significant in the blood condition.

Another curious phenomenon which appears in the course of paresis very frequently is the so-called insane ear or hematoma auris. It is agreed by alienists that in all forms of insanity the prognosis is bad when this symptom appears, for it is found in every form of insanity. It consists of a quickly developed extravasation of blood into the auricle of the ear, filling the pavillion, but does not affect the lobe. It appears quickly and may grow to the size of an egg in the course of a few hours. It is generally of a bluish red color and is filled with a gelatinous material, principally broken down blood. It is due, undoubtedly, to a morbid change in the cartilage of the ear, which consists in cell degeneration, loss of elastic fibers, and breaking down of the hyaline basis so that it forms a cyst. As a result of this, in the walls of the cysts are developed new capillaries which are very prone to degenerative changes; they rupture, and the hematoma results.

The study of the temperature in general paresis has not been very satisfactory in its results. There have been no special changes noted which are diagnostic of the disease. The paretic generally has a normal temperature, with possibly a slight rise toward night, until late in the disease. Peterson and Langdon have come to the conclusion tnat the daily oscillations in the temperature of a paretic is about the same as in an ordinary person. They do not believe that any change in temperature is due to the pathological phenomena of the disease. So it is with the pulse rate. There is not much change in this condition except that in the early stage there is frequently high tension, but as the disease develops cardiac enfeeblement ensues. Savage has stated that in studying the tracings of the sphygmograph in a series of cases of general paresis, there is no special pulse which can be associated especially with the disease. In a few cases the left ventricle acts with undue vigor, and in some cases febrile symptoms are present, but there is nothing of great diagnostic value.

As all the vital functions are affected in general paresis, so it is true in the case of the urine and the bladder. Especially in cases where siral symptoms are found the patient is likely to have bladder trouble. For example, retention of the urine is not uncommon; it is, in fact, a source of great anxiety in hospitals where paretics are cared for. This may be due to paralysis of the bladder, and degeneration of the muscular coats of walls of the bladder infrequently follows. Of course, late in the disease incontinence of urine is always present. As far as any diagnostic condition of the urine itself, there is nothing of any special value. The specific gravity is generally normal, while the phosphoric acid is diminished. There is no lesion of the kidneys present during the disease sufficient to produce any special condition of the urine. The actual amount of urine pased, in proportion to the bodily weight, is generally more than normal. In the latter part of the disease the urine is apt to undergo an alkaline change, and the patient gives trouble on account of his habits, but outside of this the urine presents no special features.

In deciding between paresis and other diseases, it is necessary to take into consideration many points, for there is no doubt that under certain circumstances it is impossible frequently to make a diagnosis of this condition for some time. For example, in syphilitic insanity, which is characterized by mental excitement and motor restlessness, which passes on to the stage of mental enfeeblement and complete dementia, it may be hard at times to make a diagnosis. But we must remember that the nervous symptoms in this form of disease exceed the mental, while the motor impairment is paralytic rather than paretic. It is very apt to be unilaterial or localized while the ocular symptoms are generally intense.

When it comes to the question of chronic alcoholism, much confusion can arise, for there may be present delusions, but if they are, they are generally unlike the placid, contented state of exuberant happiness of the paretic. The tremor in alcoholism is more universal and is not noticed as in special groups, while the motor symptoms are decidedly less in degree, and while there are certain cases undoubtedly of chronic alcoholism which approach very closely to general paresis, and it may be impossible to make a diagnosis for a time.

Another phase which has been confused with paresis, is epilepsy and apoplexy, but it must be remembered that the easily irritated condition of the epileptic is very different from that of the paretic. Following the epileptic

fit there is a tendency to stupidity, while in paresis with epileptiform convulsions, each attack is followed by a tremendous increase in mental symptoms which is out of all proportion to the severity of the convulsion. The mental and physical state of the patient should decide the difference. In apoplexy there are a number of things which separate the apoplectic form of convulsion in paresis from cerebral hemorrhage. Moreover, the history of the case both preceding and following the attack should clear it up.

When it comes to the question of acute delusional mania, there are undoubtedly cases of this kind with ideas of personal grandeur, with some tremulousness of the facial muscles, which it may be impossible almost to decide from general paresis, especially in those cases in which there are outbursts of fury; but these attacks in general paresis generally begin quickly and end quickly, and leave the various delusions intact. This, with the mental weakness, is in great contrast to the gradual recovery of true mania, with the acuteness of memory which is common during convalescence. There is also wanting in acute mania the tremendous exaggerations found in general paresis, for these delusions in mania are generally fixed in character, and reasoned out carefully and are not simply the results of an imagination uncontrolled by reason. They are held to firmly by the monomaniac, while the paretic easily shifts his position from point to point.

Senile insanity can be divided from general paresis by the fact that the latter condition rarely develops after 60 years of age. There have been a few cases reported in which paresis occurred over 70 years of age, and one case as late as 75, but these are very rare and should not prejudice the mind of the diagnostician.

PERNICIOUS VOMITING OF PREGNANCY (HYPEREMESIS).*

BY J. M. KRIM, M.D., LOUISVILLE, KENTUCKY.

CASE I. Mrs. E. V., aged twenty-seven years; married five years; second pregnancy; had been in perfect health up to the second month, when moderate nausea and vomiting began. As she felt fairly comfortable at this time no medication was deemed advisable.

Beginning with the third month nausea and vomiting increased; there was almost complete loss of appetite; pulse 100; temperature normal; sleep restless. The various remedies usually recommended were tried without benefit. Absolute rest in bed advised, with ice, iced milk and champagne, as indicated. Medication continued without favorable effect; patient began losing flesh rapidly; pulse 100 to 120; temperature normal.

After numerous consultations, the failure of medication and other means to alleviate the condition, the patient losing ground rapidly, pulse 140, temperature 99° F., continuous nausea and retching, abortion was decided upon, to which the husband would not then consent. However, he yielded the following morning, and dilatation of the os having been accomplished the membranes were ruptured by introduction of a sound, and in about ten hours abortion was completed.

The patient made good recovery and has borne two children since without difficulty and without nausea or vomiting during the course of the gestation.

Case II.—Mrs. H. P., aged thirty years; married five years; first pregnancy; was in perfect health up to the fifth month, when moderate nausea and vomiting began, with some impairment of appetite. The condition was controled by medication for a time, but increased nausea and vomiting set in which it was absolutely impossible to alleviate or control by any method of procedure. Rest was only procured by hypodermatic injections of morphine, retching even manifesting itself during sleep. Anorexia was now complete; temperature 99⅘° F., pulse 130. Rectal alimentation with beef peptonoids, bovinine, milk and panopepton was practised for a time, but without good results, nor was there any improvement in her condition.

Consultation was held and induction of abortion decided upon, but was absolutely refused, the patient stating that "she was very anxuious to have the baby, and if the baby had to die she wanted to die with it." (Incubators had not then come into use in this part of the country, or we might have offered her this inducement). Abortion was not induced and she finally succumbed, practically dying of starvation when pregnancy was about five and a half months advanced.

Case III.—Mrs. J. K. S., aged thirty-six years; in the third month of her fifth pregnancy; had no trouble in her previous pregnancies, beyond slight nausea and vomiting. In this pregnancy nausea and vomiting developed in the ninth week, and were progressive from the beginning.

Rest in bed, medication and other methods of treatment had no effect; she began to lose flesh rapidly; pulse 140, temperature 99° F.; anorexia complete.

After consultation late one night it was decided to induce an abortion the following morning. About three o'clock in the morning I was summoned hurriedly, as she had decided pain in the abdomen and it was feared she was dying. I reached the bedside within half an hour and found her laboring with an abortion; the os was found slightly dilated, the membranes which protruded were very tense and by barely touching them rupture occurred and a large quantity of fluid came away. In a short time a four months fetus was expelled, and shortly afterward the afterbirth was delivered. Nausea and vomiting ceased, and she began to eat and retained food without difficulty.

Three weeks later this patient informed me that there certainly must be another child in her uterus, as she felt something moving. Upon careful examination it was found that she was correct, and she went on to full term with this second child without any further trouble from nausea or vomiting.

A condition such as occurred in the last case must be extremely rare, and I would like the members in their discussion to state whether they have met with such cases.

DISCUSSION.

Dr. M. K. Allen: I remember to have had but one case of the kind mentioned by Dr. Krim; the family would not consent to the induction of premature labor, and the woman died of absolute starvation.

Dr. J. W. Irwin: I have never seen a death from pernicious vomiting attending pregnancy. I have believed that pregnancy took place low down in the uterus in these cases; that pressure exerted on the neck at or near the internal os, and irritation from that source gave rise to the peculiar reflex vomiting.

In every case I have seen where there were evidences of kidney complications, pernicious vomiting has occurred, but I have never done nor advised abortion for its relief. In most cases relief to the patient has been obtained by painting the external os and cervix with tincture of iodine and carbolic acid. All the cases I have seen possessed a neuropathic history. In one or two

* An Abstract.

cases ulcerations about the neck of the uterus existed before pregnancy occurred. I have tried ingluvin, but found few patients could retain it. Remedies given by the mouth were of little value. Large doses of any anodyne are required to overcome the reflex irritation; ¼ grain of morphine and ½ grain of cocaine administered hypodermatically afforded relief in some cases. I always put the patients on a light diet, principally of liquid food, and have succeeded in carrying all of them through to term, and they have all been delivered of living children, although the women themselves were sometimes much reduced in general health during the period of utero-gestation.

I have never met with such a case as the last one reported by Dr. Krim. The occurrence is certainly uncommon and the case is well worth recording.

Dr. T. P. Satterwhite: I have knowledge of but one method which has done any good in these cases, and that has not always succeeded, *i. e.*, dilatation of the cervix. I have believed the reflex vomiting of pregnancy was due to the fetal attachments being low down in the uterus. In every case I have seen vomiting has ceased, and the patients have recovered, after premature labor was instituted. Where pernicious vomiting is making a decided impression upon the nutrition of the mother, I always recommend premature labor.

Dr. Ewing Marshall: I do not believe painting the cervix with iodine or carbolic acid has any influence whatever in controling the effects of the child in utero. I have seen some cases of severe vomiting during pregnancy which has generally been controled. I concur most heartily in the practice advocated by Dr. Krim, and if I had a case where pernicious vomiting was exhausting the patient, I would not hesitate to advise the removal of the fetus.

Dr. W. F. Boggess: In cases of pernicious vomiting of pregnancy, where the patient is rapidly becoming exhausted, with a pulse running from 120 to 130 to the minute, with progressive emaciation, I would not hesitate to advise premature labor. I think this is most excellent practise.

Dr. Carl Weidner: The last case reported is one of unusual interest. One fetus expelled at four months, and another carried to full term, of course means a twin pregnancy with two placentæ.

Abortion is the only curative measure of which I have knowledge, and we are justified in resorting to it in these extreme cases. I cheerfully concur in the practice Dr. Krim has advised.

Dr. J. M. Krim, closing the discussion: Everything in the materia medica that has ever been recommended for the relief of vomiting of pregnancy was tried in the cases I reported; not only this, but every domestic remedy suggested by the "old women" of the neighborhood was brought into requisition without any appreciable beneficial effect. Many things unheard of in the medical profession, known to the laity, handed down to them as heirlooms of superstition and empiricism, were brought into service without avail.

The most important question in these cases is when should abortion be done? DuBois has laid down the rule that when other means have failed abortion should be resorted to. If we wait until the patient is practically exhausted from persistent vomiting, constant retching, rapid pulse, etc., there is extreme danger in bringing on premature labor. We should resort to this measure much earlier than has been our practice. No absolute rule, however, can be laid down, and it becomes a matter of the best judgment of the physician in attendance.

FIRST USE OF ANESTHESIA FOR SURGICAL PURPOSES.

IT is with the discovery of anesthesia as with the authorship of the works ascribed to Shakespeare. The more efforts there are being made to trace the origin of this to surgery so important discovery, and the more light some well-meaning people claim to throw on the question, the more claimants we see arising and the more uncertain we are made as to the person to whom the honor of first introducing anesthesia really belongs. It is held that Dr. Thomas Jackson in the winter of 1840-'41, with full knowledge of the danger to which he exposed himself, was the first to inhale ether to such an extent as to lose all consciousness and that the first practical use of anesthesia was in 1846, when it was administered to a patient by Dr. C. Warren at the Massachusetts General Hospital. According to others it was Horace Wells, an American dentist, who discovered the use of anesthesia as late as December 11, 1849. The fiftieth anniversary of the discovery was celebrated by a large banquet. And now comes Dr. George Foy, of Dublin, who proves by official documents that Dr. Long's claim to the priority of the discovery was well founded. According to these documents, Dr. Crawford Williamson Long, of Jefferson, Ga., was the first to produce narcosis in the removal of a tumor from the throat March 30, 1842, for which operation he received the royal fee of two dollars. This was bad enough, but, in spite of the disagreement as to date and name, we had at least the satisfaction of knowing that the discovery belonged to our time, and, what is more, to America. But alas! even of this satisfaction we are to be deprived through the heathen of China, who as in so many other discoveries seem also to have anticipated anesthesia long before we even dreamed of its use. Indeed a Chinese manuscript in the Paris Library goes to show that anesthetics for surgical purposes were used in China 1,700 years ago. It states that when a surgeon conducted a serious operation he gave a decoction to the patient who after a few moments became as insensible as if he were dead, during which time the surgeon performed the operation whatever it might be, after which he brought together and secured the tissues and supplied liniments. After a certain number of days the patient recovered, having experienced no pain during the operation. Thus history repeats itself, many of the so-called new discoveries of to-day having been really recorded in a more crude form perhaps than at present in the musty tomes of centuries ago.

Dr. De Lancey Rochester, of Buffalo, justly expresses in the June number of the *Buffalo Medical Journal* gratification at the unanimous election to membership in the Erie County Medical Association of a physician who had before been regarded as a homeopathist His election followed close upon his protest against the use of the words "homeopathic physicians" in a resolution presented before a general meeting of the physicians of Buffalo. He is reported to have said that it was time to drop such qualifying adjectives, for sectarianism in medicine was really dead and it was wrong to keep up the semblance of it by the use of such misleading terms, and that, so far as he knew, no physician limited himself in his practice in such manner as the word homeopathic implied, and it was the manly and honest thing to come out openly and say so. It was Dr. F. Park Lewis who made this protest, and he was joined by Dr. A. T. Bull. We trust the day is not far off when their example will be widely followed by those whom the community looks upon as homeopathists.—*N. Y. Medical Journal.*

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"I hold not with the pessimist that all things are ill, nor with the optimist that all things are well. All things are not ill, and all things are not well, but all things shall be well because this is God's world."

R. BROWNING.

GEN. WOOD AT WILLIAMS' COLLEGE.

IN a speech delivered by Gen. Wood before the Alumni of Williams' College, he makes important statements which may be considered authentic, in reference to his work in Cuba and the instructions of President McKinley on his appointment as governor of that island. Notwithstanding all that has been said by the anti-imperialists in reference to the intentions of the government as to the future of Cuba, the only instructions given by the President to Gen. Wood, and no one at all familiar with the life of the President can doubt their sincerity, were: "I want you to go down there to get the people ready for a republican form of government. I leave the details of procedure to you. Give them a good school system; try to straighten out their courts and put them on their feet as best you can. We want to do all we can for them and we want to get ready to get away out of the island as soon as we can safely do so." A slight detail given by Gen. Wood shows with what earnestness and success he carried out the instructions of the President and how much Cuba owes to the honesty, wisdom and energy of the governor backed by the government at Washington and by the verdict of the people. The problems that first confronted Gen. Wood, he says, were those of sanitation and education, both of which under the long rule of Spain were in as low a condition as possible. The result shows that energetic work conducted on the basis of science is of more advantage to success than any amount of prayers. Havana and Santiago from being the most unhealthy cities in the world are able to produce a cleaner bill of health than the city of Washington, and the island of Cuba will compare favorably with New England in rate of mortality. Gen. Wood says when Santiago surrendered its sanitary condition was beyond description. Its death rate was simply appalling—300 deaths a day, in a population of 40,000. In one province there were 3,000 cases of smallpox and in one hospital 1,200 cases. Millions of dollars were spent in sanitation and by the end of December that year the hospitals were fairly well organized and 300 schools were running. As far back as 1881 an old Cuban physician, Dr. Finlay, advanced the theory that yellow fever is transmitted by mosquitoes, but never found the particular variety that produced the infection. An entomologist of New Jersey has asked an appropriation from the state to enable him to carry on the investigation of the variety, life and habits of mosquitoes and flies which carry the infection of yellow fever and malaria. After the American government commenced the reconstruction of Cuba, different methods were tried for the extermination of yellow fever. First came the experiment with corrosive sublimate, then the successful campaigns against the mosquito. Then the yellow fever commission was formed, the results of whose investigations were of the utmost importance to science, producing one of the most valuable discoveries of the age, which Gen. Wood says was worth the whole cost of the war, giving us power to control and even eradicate to a certain extent a pestilence which had raged with fearful mortality not only in Cuba and along the southern coast of the country, but in South America. Adopting this same line of investigation, ascertaining facts and remedying evils as old as the Spanish government, Gen. Wood directed his attention to the matter of schools and the education of the people. Over the whole island were scattered prisons, military hospitals and barracks, nearly enough to make school houses for the people, for which purpose they were utilized. Public schools were unknown, and there was but one university on the island and that poorly attended. During the short period that Gen. Wood was in power 3,786 public schools were established with 4,000 teachers, and the yearly enrollment for pupils was 252,000 with a daily attendance of 140,000. Twenty-five per cent. of the $4,200,000 revenue of the island was spent for educational purposes. In this way the filth and disease germs of the island were eradicated to a certain extent and the foundations laid broad and deep for the future prosperity of the island. Surely, in the preparatory steps for the future republic, the honesty and sincerity of the great republic is clearly shown, in fulfilling its promise to the young nation in its infancy. It were well if as much could be said for the carrying out of the reciprocity, when the life of the new republic seems almost to hang upon the fulfillment of that

promise. The problem of sanitation and education in the Philippines requires an untold amount of thought and energetic action to bring it in line with the work already performed in Cuba. In some of the islands the cholera is raging with fearful violence and the work of sanitation and education, of course, advances slowly, but looking at what has already been accomplished in Cuba, may we not hope that under wise statesmanship and the ceaseless investigation of scientists similar results may be produced in the educational and sanitary conditions of the islands to what has already been accomplished in Cuba. Back of the selfish greed of a few officials in Washington, beats the great heart of the people, and its voice will ring out clear and in tones not to be misunderstood, for justice, honest work, and intelligent government. In this connection we repeat the statement which has been frequently made in these columns of the necessity for a Cabinet Minister of Health. The condition of the immense territory and the millions of people over which we must exert more or less influence in the formation of the new governments, opens a wide field of usefulness which can be met in no other way. No better men could be found than Gen. Wood, whose action in Cuba has given us an insight of what can be accomplished in this department, or Gen. M. O. Terry, whose efficient work as Surgeon General of the State and his investigation under the direction of Governor Black, of the sanitation of the camps in Florida, has placed him in the front rank of scientists and practical men in his profession.

BELLEVUE HOSPITAL.

THE State Commission of Lunacy has decided to abolish the pavilion for the insane, which for many years has been a part of Bellevue Hospital. In its place two reception Hospitals will be constructed, one in Manhattan and one in Brooklyn, to which suspected cases of insanity may be sent. This action is taken on account of the many cases of scandal in the years past which have grown out of the alleged ill-treatment of patients hastily committed to the insane wards in Bellevue Hospital. After having been kept under observation for a sufficient length of time in the new reception hospitals, to enable the physicians to determine the character of the disease, differentiating between alcoholism, drug poisoning, nervous prostration and insanity, the patients are to be sent either to private institutions, state hospitals or dismissed entirely, according to their condition. The commission believes that this course will prove a sufficient guard against the errors which may have been committed in previous years, owing to a lack of the careful study of the patient, so essential to a correct diagnosis of the case. The Manhattan reception hospital will be large enough to accommodate one hundred patients. If an attack of insanity seems to be merely temporary the patient will be detained in the reception hospital until he recovers or his case becomes chronic. The Manhattan institution will probably be placed at the foot of East Eighty-sixth street.

"WAR IS HELL."

THE truth of the statement of one of our most distinguished military leaders, from practical knowledge gained on the battle field and in the camp, that "war is hell," is true in more ways than one. Not only is the strength of the nation sapped by the destruction of human life on the battle-field and in the camp, but the general death rate is increased and the birth rate diminished. It should be remembered that the great fatality to human life in all wars, ancient and modern, especially noted in our recent Civil War, that of England in South Africa, and the United States in the Philippines, is not found on the battle field, but it exceeds more than two to one in the camp, the hospital and on the march. This is true, notwithstanding all the modern improvements in removing the wounded from the battle-field, and all the modern appliances of science in the managements of hospitals, in the treatment of wounds and the care of the sick. In the partial reorganization of the army and navy now going on, no more important change could be made or recommendation adopted than that proposed by the Surgeon General in reference to the curriculum of study in the great schools for the army and navy at West Point and Annapolis. The Surgeon General has urged with all the force of his official position that there should be introduced into both of these institutions a full and minute course of military hygiene. In the selection of the camp the preparation of food, and everything relating to the health of the army, the line officers should be in touch and work in harmony with the medical department. The medical department on the march and in the selection of a camp are oftentimes overruled by the line officers who have been taught to fight, but not to keep the men in the proper condition to do the most effective work, with the least loss in sickness and death. The majority of diseases in the camp and in the hospital are of that character which by a proper understanding of the laws of hygiene and a harmonious working of the line officers with the medical department could be prevented. Of all the Generals in the army during the Civil War, "Stonewall Jackson," through his knowledge of hygiene, so conducted his army, to save unnecessary fatigue, and in the proper selection of his camp, to bring his men into action in the best possible condition. This could easily be accomplished in every department of the army if all officers holding important positions were instructed in the laws of hygiene. What has been said of the army and navy is true also to a less extent in every department of labor. The most important branch in what should constitute a thorough education in our colleges and schools, that of Hygiene, is much neglected. Teach man how to live

and you strike the keynote of a longer and a happier life and abolish a large portion of preventable diseases which yearly carry off thousands of victims.

CONSISTENCY.

AT a recent examination of the graduating class of a prominent Theological Seminary, one of the applicants for a degree which included the admission to the ministry, failed to pass a satisfactory examination by answering to the question if he believed in the story of Adam and Eve as narrated in Genesis, that he thought Adam was a myth. The profession for which he had been so long in preparation being thus closed to him, the young man sickened and died. It was but a poor consolation to the afflicted family, that the examiners reconsidered their decision, and that his degree was received at his residence a few moments after he had breathed his last. The New York *Herald* instituted an inquiry among prominent theologians, the doctrines of whose churches taught the literal interpretation of the story of Adam, as to their real belief in the light of recent Biblical criticism. Among the replies received was one by a prominent Presbyterian clergyman, the editor of a leading church paper, who proves to his own satisfaction and to that of most of his readers, that the story of Adam and Eve is a myth, the account not to be taken literally, but the interpretation of which may not be clearly understood. If the story of Adam and Eve is a myth, the account of the fall is another, and if there was no sin to expiate and also no need of redemption, the very foundation upon which the Christian church is built would fall to pieces. The author has probably not thought of all these logical deductions to be drawn from his article or the position in which it places him, as a Christian teacher, denying and proving the falsity of the leading doctrines of his church. So, while we agree with the conclusions of the learned editor and clergyman it is to be regretted that he remains in full fellowship in a church whose creed is entirely different from the recent developments of science, including a more careful study of ancient history through which we reach a greater accuracy in Biblical criticism and a more correct understanding of great principles in religion and science. This can be clearly seen in what has been called two of the learned professions, Theology and Medicine. Scarcely a century has elapsed since what was considered heresy in religion, sufficiently great to light the fires for the martyr, and develop the tortures of the inquisition, is now considered entirely orthodox, and yet the creeds formed during the days of ignorance and superstition and their falsity proved by the researches of modern thought and investigation, still hold their place as the basis of creeds and church organizations, notwithstanding the total disbelief in their truth by a vast majority of those who subscribe to their tenets. What may be said of Theology is equally true of Medicine. The researches of science and the facts brought to light by the microscope, the spectroscope and the chemist, with the test of remedial agents upon the living organism and comparing the results with the pathological changes produced by disease, and the effects obtained by these agents upon diseased conditions, is leading to an obliteration of false theories and a closer union of medical thought upon a strictly scientific basis. We are just beginning to see the magnificent results reached through a study of light and electricity, which has been called the soul of the universe, and the laws of Hygiene, whose harmonious working have been reached with almost mathematical precision. Within the past few months the annual meeting of two of the oldest national Medical societies in the United States have been held—the oldest national society, the American Institute of Homeopathy, at Cleveland, Ohio; the next oldest, The American Medical Association, at Saratoga Springs. These two schools, between which in times past there has existed such bitter antagonism, now seem to occupy, so far as the great principles of medicine are concerned, almost the same position. Able papers were read at both conventions, so nearly alike, as far as general principles were concerned, that it would have been almost impossible for a stranger to have noted any essential difference between them. The great principle amply tested by science and the truth of its correctness fully proved of the dual action of drugs, one of the leading principles in this system of medicine promulgated by Hahnemann is now conceded to by all of our leading scientists in Materia Medica and Therapeutics. The laws of Hygiene and Antisepsis so clearly enunciated by Hahnemann and afterwards still further developed and made a specialty by Lord Liston, are uniting the whole medical world in a closer bond of union, and placing them upon the same platform. We are glad to see that at the meeting of the American Medical Association a committee was appointed to report at a future day, revising its code of ethics which was the cause, at a somewhat recent date, of a large number of the leading physicians of New York, withdrawing from its membership and forming a more liberal organization. With the revision of this code which has done so much injury, and an honest and frank ignoring of all sectarian designations, recognizing the catholicity of the medical profession shown in practice by the bedside as well as utterances on the platform and in literature that no one dogma is able to cover a profession which in breadth and strength should be in touch with every avenue of science. So far as it is related to life and health, the whole medical profession may at no distant day become a unit, increasing a hundredfold its power of good.

POST-GRADUATE MEDICAL TRAINING.

THE early laws of New York and some other states, recognized as an integral part of the education of medical students, experience gained under the direction of a preceptor. At first the medical school was a rather informal addition to this training. Later, the formal attendance at a college was required by law, but the instruction received from a preceptor was still regarded as of prime importance. Then, with the improvement of the colleges, the preceptorship became merely a substitute for part of the course, and finally the college and hospital were recognized as the only methods upon which a proper check could be placed.

Fifteen or twenty years ago there was opportunity for only about one graduate out of ten to secure a hospital experience, but with the limitation of more recent laws the medical graduates have been at least proportionately reduced while the increase of hospitals and of the modes of study in each institution have more than doubled the available interneships, so that there is now an opportunity for probably a quarter of all graduates to acquire practical familiarity with at least certain aspects of disease, before entering upon medical practice.

Yet there were many aspects of the old system of medical apprenticeship which were extremely valuable, and it is notorious that an interneship, too long protracted, tends to unfit the physician for certain phases of medical life. Not only does institutional practice teach one to lean upon aids that are not available in private practice, especially at the start, and almost permanently in remote districts, but it tends also to too great subdivision of labor and to a failure to regard the patient's personal peculiarities. It may even be argued, with much truth, that the manifestations of disease observed in a hospital ward are exaggerated and distorted as compared with the ordinary clinical phenomena of disease in a better class of the community.

It is, however, practically impossible to insist upon a personal preceptorship before commencing private practice, as the majority of physicians no longer regard an assistant as necessary and often not even as desirable, while, conversely, by no means all practitioners are desirable as teachers.

The old requirement of preceptorship had both its faults and its advantages. Chief among the former was the fact that it preceded instead of following the theoretic instruction in medicine. We believe that it would be wise to grant no license to practice except after six months or a year of practical work, either in a hospital or with a practitioner of at least five years' experience. Along with such legislation should be the provision for a strictly impartial appointment of internes by any hospital receiving public aid in the care of patients—it would be obviously impossible to control institutions which are strictly private. In this way a check would be afforded to the entrance upon practice of those without practical experience. There would be no objection to paying salaries to internes and assistants, if demanded by the law of supply and demand or if it could be arranged for as a matter of abstract justice.

Up to fifteen years ago it was almost impossible for the student to procure a text book on gynecology that could be followed systematically and his mind was confused with a host of details of "minor" gynecologic therapeutics now relegated to oblivion. The use of active principles is gradually driving out much of the mental drudgery of materia medica, while therapeutics is simplified by a scientific study of pharmacology so that it is no longer necessary to resort to memorizing arbitrarily the action of each individual drug. Teachers and examining boards are also beginning to recognize the practical necessity of teaching a comparatively few representative drugs well, rather than pretending to teach the use of every weed that has at one time or another found its way into the pharmacopeia.

Specialism has already reached such a stage that it is no longer regarded as necessary or even safe to make an effort to teach the student to cope with every manifestation of disease.

It may be that the popular and professional demand, combined with a factor that cannot be ignored —the mere pride of educational institutions—will require a further increase of medical education before the tendency to make the scientific basis of medicine a prerequisite to admission to the medical school proper, has been fulfilled. But it must be admitted that a two-year strictly medical course, on a firm foundation of general and biologic education, exceeds our present attainments.

We shall discuss later the need of post-graduate practical experience, under a preceptor, including the hospital staff.

THE DUTY OF THE STATE TOWARD THE SUSPECTED CRIMINAL.

IN a most interesting paper by Dr. Henry Leffman, of Philadelphia, reprinted from the *Philadelphia Medical Journal*, the medico-legal status of arsenic poisoning is discussed. Two extremely important points are developed; that the two cases reported in which death has been considered to have occurred from the minimum toxic dose of two grains of white arsenic, have been followed up by Dr. R. A. Witthaus and found not to be well established, and that arsenic poisoning without local gastric lesion is not well established.

Commenting on the difficulty of excluding arsenic as a result of embalming, is the following statement which we quote for the purpose of expressing an opinion as to the duty of prosecuting attorneys and medical expert witnesses.

"Two important points in toxicological chemistry

are to be noted in this connection. The frequent use of zinc compounds with arsenic in the preparation of these (embalming) fluids will suggest a method of detecting the presence of the fluid. Such an opportunity did, in fact, occur in a case tried in the State of New York a few years ago. The chemist found both arsenic and zinc in the viscera. The embalming fluid which had been used also contained these elements, but the proportion of zinc to arsenic was much less in the viscera than in the original fluid, and the chemist inferred that some additional arsenic had been given. The prosecuting attorney would not allow the expert to mention the finding of zinc, for fear it would lead up to a knowledge of the use of the embalming agent, of which use the defence was ignorant. The prisoner was convicted, but got a new trial; in the interval the defence acquired a knowledge of all the facts and the second trial resulted in acquittal."

In general it may be said that the duty of a lawyer is to secure a verdict in favor of the party which he represents, but, in the case of a prosecution by the State, the State's representative is not bound to convict a certain person, however suspicion may point toward him as guilty. The withholding of such knowledge as Dr. Leffman refers to in the quotation is little short of an attempt at murder. A prosecuting attorney who would exclude chemic evidence which would cast a reasonable doubt on the theory of antemortem poisoning might well be suspected of surreptitiously introducing poison into viscera in another case, for the purpose of establishing his contention and gaining a legal victory. The man who would do the one thing and stop short at the other has just enough conscience to make him dangerous.

But it would be outside the province of a medical journal to do more than allude to the duty of the legal representative of the State. We are more concerned with the duty of the medical expert. The latter, however employed, ought never to be a partisan. If honorable, he will clearly regard his duty to be not toward a party to a trial but toward the court as a whole. When there is a possible difference of opinion, it is perfectly proper that these differences should be expressed by conflicting authorities, but the absolute and complete truth should be told by an expert, as well as by an ordinary witness. The expert witness occupies a position midway between the ordinary witness and the jury. Like the former, he is to testify to observed facts; like the latter he is to draw conclusions from those facts. These two functions should be clearly separated in his testimony. Although not the interpreter of the law, he is the interpreter of the special conditions of the case in hand. He should refuse to reply categorically and without qualification to a hypothetic question which distorts the evidence. If, as is usually the case, the testimony allows a possible difference of deduction, he should state distinctly to the jury the various deductions which may reasonably be drawn and should then express his own opinion between or among these deductions and defend his reasons for his conclusion.

A few years ago, there was executed, a medical student who was supposed to have killed, by morphine, a young woman to whom he was, or at least had been, deeply attached. He died protesting his innocence. So far as we could judge from the testimony reported, there was considerable doubt of the existence of a criminal motive and the accused told a consistent story of therapeutic and moderate use of morphine which was indirectly corroborated. It did not seem established that a lethal amount of morphine had been given and, granting that there had been, it was possible that a mistake had been made in dispensing pills of larger dose than intended or that an error in manufacture had been perpetrated. The accused certainly did not establish his innocence beyond question, but, on the other hand, even if it had been to his interests to put the victim out of the way, it is strange that he should have given morphine without any particular attempt at concealment or denial after the death of the patient.

In another case, a physician who had already made out a death certificate according to "natural causes" —which, by the way, should never be accepted by health boards, unless as the result of deliberations of an inquest jury in which the cause of death is entirely beyond discovery—swore that death was due to hydrocyanic acid which he smelled in the brain, after exhumation, several days after death. The "expert" had had little experience with necropsies and may have been misled by the normal spicy odor of the brain. At any rate, he had failed to notice the odor of hydrocyanic acid in the room of the patient, in winter, within an hour or so after she was supposed to have been killed by a dose of this pungent drug. In this instance, the accused had a motive for murder and he apparently was of greater value to the community dead than alive. On the other hand, the motive was not a pressing one nor is it an excuse that a man deserves death on general principles.

Another injustice of our present system of trials of persons suspected of murder, or other serious crime, is the method of securing juries. In minor cases, the juries are often composed of human riff raff glad enough to serve. In serious cases, a well intended effort is made to secure the service of responsible citizens, but their very responsibility tends to distort their vision of the merits of the case. It is said that several jurors on the famous Beecher-Tilton trial were financially ruined by their long detention from business. Imagine a man virtually imprisoned as a juror on a long trial, kept under the most irksome conditions, often in a state bordering on physical illness from lack of accustomed exercise, uncongenial, if not positively offensive association with

eleven other men, and deprivation of the diet and comforts of life to which he has been accustomed. Consider, too, that he is in a condition bordering on insanity from worry over neglected business interests. How can such a man weigh judicially the facts of a lengthy trial? However conscientious, he soon drifts into a hysteric state in which his paramount desire is to be rid of his uncongenial task.

Another detail in which the state often prejudices the chance for life and liberty due to every suspect, is the emphasis placed on circumstantial evidence. This is particularly true in regard to the establishment of a criminal motive and the demonstration of actions consistent with the hypothesis of guilt. In both these particulars, the principle should be laid down that little weight should be attached to motives or actions also compatible with abstention from crime. Very frequently, in fact usually, in cases in which a married man or woman dies suddenly under suspicious circumstances, the surviving partner is accused and the most trivial disturbances of the calm of marital life or any evidence of infidelity is emphasized, although such indications of a "motive" exist in thousands of cases in which murder is not committed. In one instance, one of the "motives" ascribed was the desire to marry another woman who was notoriously liberal in her affections and with whom the defendant had probably had illicit intercourse, as dozens of other men certainly had had. If a suspect shows any sign of nervous excitement, in the presence of sudden death, it is evidence of guilt; if he is calm, it shows his cold-bloodedness and brutality. Men have been acused of wilful delay in summoning assistance if they have gone on foot instead of waiting for a vehicle, yet every busy man does the same thing almost daily, instead of waiting for a street car which he could easily calculate, would bring him to his destination more promptly.

DR. TALCOTT'S WILL.

The will of Dr. Seldon H. Talcott, late superintendent of the State Hospital for the Insane at Middletown, leaves a fund to the Union School at Waterville, N. Y., to provide for the continuation of prizes in recitation and declamation founded by Dr. Talcott twenty-eight years ago.

MILK IN POWDERED FORM.

A Swedish scientist has recently invented an apparatus whereby milk can be reduced to powder. The process differs materially to that so long in use of condensing milk by evaporation. The milk flour is soluble in water and can be used for all purposes for which milk is employed. It does not get sour, it does not ferment, and in its dry state is not sensitive to changes in the weather. It can be kept and transported in tin cans, barrels or bags. The cost of reduction is about 27 cents for every 106 quarts. Skim milk which hitherto has been so largely wasted can be reduced to flour and sold for about 13 cents a pound. In its dry form it can be transported all over the country without losing any of its original good qualities.

BIBLIOGRAPHICAL.

A Treatise on Diseases of the Skin.—For the use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology, Jefferson Medical College and Woman's Medical College, Philadelphia; Dermatologist to the Howard and Philadelphia Hospitals. Handsome octavo of 1,125 pages, with 220 text-illustrations, and 26 full-page lithographic and half-tone plates. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $6.00 net; sheep or half morocco, $7.00 net.

This book presents the practical part of the science of dermatology in a sufficiently full and complete manner to make the work one that will give the general practitioner a clear comprehension of the symptomatology, diagnosis, and treatment of the various affections with which he is most likely to come in contact. Diagnosis being the most difficult and confusing part of cutaneous medicine has been wisely accorded considerable attention. The elaborate remarks under General Diagnosis will be found of substantial aid in narrowing the diagnostic possibilities. Treatment has been detailed with unusual clearness and accurateness, the author, in addition to the remedies and methods used in his own practice, having referred frequently to those employed and advised by others.

Not only in the practical parts of dermatology, including symptoms and treatment have been described more or less in detail pathology and pathological histology have been discussed in a sufficient ample manner as to be a complete but relatively brief, reflex of our present knowledge. The clinical and pathological aspects are further elucidated by a large number of very beautiful illustrations mainly from the author's own collection, besides a number of lithographic plates of exceptional merit. The work, though originally planned for the student and general physician, will be found of material assistance to the specialist in presenting in illustration and text the most advanced thought and practical work in dermatology.

Atlas and Epitome of Abdominal Hernias. By Privatdocent Dr. George Sultan, of Gottingen. Edited, with additions, by William B. Coley, M.D., Clinical Lecturer on Surgery, Columbia University (College of Physicians and Surgeons). With 119 illustrations, 36 of them in colors, and 277 pages of text. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $3.00 net.

This new addition to Saunders' series of Medical Hand-Atlases covers one of the most important subjects in the entire domain of medical teaching, since these hernias are not only exceedingly common, but the frequent occurrence of strangulation demands extraordinarily quick and energetic surgical intervention. While the well-known work of Macready will always remain a classic, it has never made any claims to deal with the operative side of the subject, and this is a side that, during the last decade, has been steadily growing in importance, until now it is absolutely essential to have a book treating of the surgical aspect of the subject. This present atlas does this to an admirable degree, and without question, will prove of very great value to the general surgeon and practitioner.

The illustrations are not only very numerous, but they excel, in the accuracy of the portrayal of the conditions represented, those of any other work upon abdominal

hernias with which we are familiar. Indeed, like all the other numbers of this excellent series, the work is a worthy exponent of our present knowledge of the subject, and in its field is unrivalled.

MOTHER AND CHILD. By Edward P. Davis, A.M., M.D. Philadelphia: Lippincott & Co.

This is really the second edition of the work of Dr. John M. Keating, remodelled in accordance with the various changes which time has brought about in the department of medicine by Dr. Davis. It is full of suggestions as regards the treatment of the mother during the period of pregnancy and of the child during its infancy, and will prove an invaluable companion to the mother and nurse.

THE ECLECTIC PRACTICE IN DISEASES OF CHILDREN. For Students and Practitioners. By William Nelson Mundy, M.D. 12mo., pp. 631, cloth $2.50 net. The Scudder Brothers Co., Publishers, Cincinnati, Ohio, 1902.

This manual on Diseases of Children is based upon the Eclectic System of Therapeutics, according to the modern and approved electic practice. The treatment is essentially eclectic, the therapy being based largely upon the personal experience of the author, and has been made to harmonize with the consensus of medcal opinion of the eclectic school, points of professional dispute and experimentation being avoided when possible. The work is full of valuable suggestions and will be consulted with advantage by physicians of all schools.

CORRESPONDENCE.

THE PASSING OF SECTARIANISM.

SECTARIANISM is a phase of human disagreement mainly limited to religion and medicine. Law obviously does not permit an organization in opposition to that which is established; difference of opinion regarding questions of politics scarcely warrants the use of the term, because no one party can be regarded as standard. As soon as political difference of opinion practically ceases to exist, along a certain line, either the correspanding parties become obsolete, or the party organization and name is continued with a new meaning. Perfect organization of science and industry is scarcely feasible to the degree that there will be a main body of one belief and considerable minorities of opposing beliefs. In other words, the astronomer who differs radically from other astronomers, or the mechanic who is at odds with others of the same trade is either intellectually warped or he desires personal freedom from the responsibilities of association so that he can not or will not become a part of a sectarian organization.

Sectarianism in medicine or religion may be a matter of dogma or methods. In general, a universal religion or a united medical profession is a desideratum, on account of the possibilities of organization and the enormous power and influence attained. At the same time, sectarianism is not in itself an evil and it is sometimes a necesary check on the arbitrary exercise of power or, at least, a beneficial protest in the line of personal liberty of thought and action.

It is impossible to draw a close comparison between religious and medical sectarianism, as the former depends upon difference of opinion regarding explicit creed and conscientious objections to methods of administration or of ritual while the medical profession has never had a definite creed and its methods have always followed the highest professional spirit of the age, with a strong conservative tendency.

The principal sect in medicine, so far as America is concerned, is the homeopathic. Considered as a body, its members have never differed from those of the parent profession except as to matters of therapeutic fact, having followed the established customs as regard to ethics and general professional spirit and not even differing materially as to any branch of medical study except therapeutics.

It might be claimed that homeopathy should never have been established as a sect but that its adherents should have practiced under the general right of the individual physician to choose his own methods of treatment. This point does not seem to us to be well taken. The original homeopathy differed so widely from ordinary practice, especially of the time, that we think its adherents acted consistently in establishing a separate sect. There could be no harmonizing of Hahnemannism with the system of medicine in vogue at the time and it would have been absurd to suppose that the minority, differing radically from the majority, could have remained as members of a catholic profession without greater friction and disunion than were entailed by a formal separation. This was generally recognized on both sides and, much as we may regret the animosity and open hostility that ensued, we must respect the mutual decision that separation was necessary.

The eighteenth and nineteenth centuries will be marked in history as the period when the world was cleared of most of its great differences as to matters of principle. It is not surprising that churches, political parties, social orders and the medical profession sometimes raised prejudices or points of mere difference of judgment, to the position of principles. There remain in the whole civilized world, very few points of difference among honest men, except those which are recognized as involving no moral issue but simply matters of wise or unwise business judgment.

The change of attitude of the medical profession, is not so much a professional as a sociable evolution. Just as different Christian denominations have conceded, first that members of other denominations might occupy the same heaven and, then, that they might even unite in this world for common work along philanthropic lines, as members of opposite political parties have realized that the demand for ordinary integrity in the conduct of government was a matter for joint action, so members of the general medical body and homeopaths have discovered that they might safely be personal friends and that they might coöperate so far as matters of medical education, public sanitation, and professional ethics are concerned. What has been said regarding the homeopathic school, applies equally to the eclectic, except that the last term in the eastern states has been preserved, rather as a designation of advertising physicians than of a school of practice.

If this were all that had occurred to change the relations of homeopaths to the unspecified portion of the medical profession, we should advocate the continuance of the sectarian difference, minus the old prejudice and hard feeling. Hahnemannism involved three elements of incompatibility with the established practice of the latter part of the eighteenth century: the divisibility of dosage to a greater degree than the divisibility of matter, the universal application of a definite rule of practice, often literally true but commonly regarded as paradoxic, and the avowed treatment according to symptoms, instead of pathologicic conditions. It is not surprising that both the general and the homeopathic practice

should have changed materially in more than a century and it is inevitable that conscientious seeking after truth and the tendency of the age toward fact and away from theory, should lead both in the same direction. The literal follower of Hahnemann was a man of straw for his opponent but the man who acknowledged the influence of Hahnemann could scarcely be expected to forego development and advance, simply to accommodate a rival in debate.

Medicine-giving, from being almost the whole of medical practice has become merely one of many means and the surgeons and practitioners of specialties which are mainly mechanic and operative, have long recognized that differences of school were principally differences of clientele. Even in materia medica, the inclination to give as little as possible, on the part of the member of the general profession and to give as much as might be necessary, on the part of the homeopath, have often brought the actual results close together. Again, just as different branches of mathematics may reach the same result by the most diverse methods of reasoning, it frequently happens that the application of the rule of similars and a study of morbid processes and pharmacologic action, lead to identical conclusions. But, just as the old methods of proving stimulated the general profession to close study of disease and the action of drugs, so the homeopathic colleges could not fail to recognize the superiority of actual investigation of diseased organs and of the measurement of the effect of drugs on animals.

The medical profession realizes the disadvantages of separate organizations and is asking itself whether the union of all medical men into one body may not be feasible. It seems to us that, in this consideration, methods should be more closely scrutinized than dogmas. There is no advantage in joining elements which would immediately precipitate a controversy as to professional methods. Whether we consider quackery as morally wrong, or merely as incompatible with professional dignity, or, as it has been put, as "contrary to the rules of the game" there is nothing to be gained from admitting physicians, however well educated and however legal their status, who would degrade the ethical standard of the profession.

Regarding ethical practitioners of sectarian designation, it is simply a question of mutual advantage whether they should affiliate with the profession as a whole or with a body of limited creed. Does the undesignated professional organization which, as a matter of convenience, has called itself "regular" and which has erroneously been called "allopathic," represent views not so far removed from those held by the homeopath, eclectic or other sectarian that it is worth while for him to sacrifice his special organizations and the opportunities which they afford for discussion of the corresponding systems of practice? Conversely, does the homeopath or eclectic or other specially designated practitioner differ from the "regular" to such an extent that mutual discussion and consultation would be absurd, as it has been considered in the past? These questions should be considered carefully and dispassionately both from the standpoint of the individual and of the organizations involved. So far as social and public matters are concerned, there need be no formal consolidation, for there is ample precedent for coöperation on a friendly footing and the old prejudice is being gradually but surely shoved into the Atlantic.

We are glad to note that these questions are being answered in the interests of professional unity. A couple of years ago a number of Cleveland homeopaths elected to join the general organization and the same process has lately embraced two homeopathic specialists of Buffalo. In many instances, sectarians have taken degrees at "regular" institutions for the sake of securing membership in general organizations, but this baptism is now usually regarded as unnecessary and the diploma of any reputable institution should be recognized as sufficient.

It should be remembered that the so-called regular organizations can, at most, show a cordial spirit and disavow the older intolerance. They have no creed, but simply stand for the average opinion of their members, they represent no school or sect, but simply the absence of a desire to qualify as allopathic, homeopathic, or otherwise the general designation of a doctor of medicine. They claim no divine nor governmental establishment, they stand for the work of no one investigator, they acknowledge no founder. Having no bonds to a fixed position, there is nothing from which they can recede and their stability and weight is simply that which is amassed from the gravitation of individuals, attracted mutually and exercising their power as a unit.

A "REGULAR" PHYSICIAN.

AN OBJECTION TO EDITORIAL EXPRESSION.

ON page 209 in July number of this journal our editor gave us an article on "Alcohol in Medicine" in which he used the following compound expression: "The prohibitionist has no place in this discussion because he cannot consider the matter from an unbiased standpoint, and neither can he appreciate the difference between use and abuse."

Now, while the above expression is of a compound character and deserving of criticism, yet I do not believe that our editor means to say no prohibition patron can have place in his journal for discussing the above subject.

In the first place prohibition principles are based on good, sound judgment, and there is no more logic shown in the above expression than there would be logic in saying: The Christian has no place in the discussion of sin, "because he cannot consider the matter from an unbiased standpoint;" or, The millionaire of to-day, who is reaping his wealth through boodleized monopoly would have as lawful reason to discredit the saying of Christ in Matt. 19:24 for the reason that Christ was poor and biased on financial issues, which placed Him in such a position that He could not "appreciate the difference between use and abuse" of money. The fact is, the Christian has a right to a place in the discussion of sin. The Godly man has a right to become a millionaire in a Godly way and will reap the sweet blessings of heaven, and so, too, has the up-to-date physician of prohibition faith a right to a place in the discussion of "Alcohol in Medicine."

The fact is thus: The application of remedies in treating diseased conditions are not only based upon what might be termed good, sound judgment, but because of the knowledge of the definite relation existing between disease expression and drug action, and the simple position of a physician's politicalism is no criterion as to his inability to enter into a discussion of "Alcohol in Medicine" either be his opinion pro or con.

It is intellect that wins in discussions, no matter of what character they be, but being at a loss to know whether our editor will admit physicians who are prohibitionists to the above discussion, or whether such

physicians are considered mentally indisposed on such topics, I will wait for further information.

S. O. Barwick, M.D.,
Wakarusa, Ind.

[The above letter shows conclusively the truth of our assertion. It would be as easy for a camel to pass through the eye of a needle as for a prohibitionist to discuss on scientific grounds the use of alcohol in medicine, for the reason that he does not admit that there can be any such grounds.—Ed.]

DR. ROCKWELL'S REPLY.

I WANT to thank "E. N. E." for the commendatory review in THE MEDICAL TIMES (to which my attention has just been called) for August, of my article "Sectarian Medicine, Its Etiology and Treatment," which appeared in *American Medicine* May 10, 1902. There are two great obstacles to professional unity. One is the lamentable ignorance prevalent regarding certain facts of medical history. Facts which if widely known would generate in the profession a sentiment incompatible with sectarianism.

The other is the feeling harbored by many on both sides of this unhappy controversy that certain wrongs have been done to each which cannot easily be forgotten, and this coupled with the classic inability to put freshly made history in the proper perspective, thus making it immediately available for temperate discussion and relatively accurate deductions, has much to do with retarding the evolutional advancement of the greatest of professions along paths which should never have been obstructed by impatient or uncharitable criticism.

And for those who hesitate to take the step advised either because they cannot present to themselves adequate reasons for so doing or because they shrink from the reproof which occasionally follows such a course. I quote below* part of a letter I once had occasion to send to a prominent member of the dominant school and which perhaps supplies the elements of a creed for those who favor broad and sound medical progress.

You are at liberty to use all or any part of this communication for publication if you think it will do good anywhere. My preference would be its publication in full if you use any of it.

I might say in closing that a number of the leading homeopathic physicians concur wholly or in part with the views expressed in the article hereinbefore referred to. Very sincerely yours, A. E. P. ROCKWELL.

Worcester, Aug. 8, 1902.

*"In view of the fact that the consistency of my position as a member of the Massachusetts Medical Society, retaining membership the while in the Worcester County Homeopathic Medical Society and the American Institute of Homeopathy, has, in some quarters, been questioned, I herewith have the honor to respectfully submit for your consideration the following explanation of my attitude upon the subject, which, in justice to all concerned, it seems proper should be made at this time.

First. I claim, in common with all freemen, the inalienable right to hold such views upon all matters as commend themselves to my reason.

Second. I endeavor to perform, in so far as my humble powers permit with fidelity and justice to all and with such skill as may be my portion, the duties of my profession, and in so doing lay claim to the honorable name Physician.

Third. Believing that no man can be a true physician unless he be also a student, I contend that one has the right to pursue, independent of the opinions of others, such studies upon such subjects as he may believe are related to his profession, and as may appear to him to contribute to the sum of his knowledge.

Fourth. I hold that if I am interested in the study of electricity, and find others likewise engaged, I have the right to associate myself with them, and in common with them strive to solve the problems presented.

Fifth. I believe that membership in the American Electro-Therapeutic Association should not debar one from joining the Association of American Physicians, provided the applicant possess the requisite personal and scientific qualifications, and provided further that there is no conflicting clause or clauses in the Constitution or By-Laws of the respective organizations.

Sixth. That, being found qualified, and having been elected and having further conformed in all particulars to the Constitution and By-Laws of the Society, no one has the right to question or sit in judgment upon the subject of the consistency of such a member, inasmuch as that is a matter involving the personal conscience of the individual concerned, and to be determined and adjusted to himself by the employment of such philosophy as he may have at command.

Seventh. I contend that any effort made on the part of any so-called scientific society to ignore or violate any of the just and fundamental principles indicated in the foregoing paragraphs, causes it to forfeit its right to be called scientific, for by such a course it girdles the very oak whose growth it is its duty to foster."

RETROSPECTIVE THERAPEUTICS.

Prognosis and Treatment of Tuberculous Peritonitis.—Dr. F. C. Shattuck of Boston, spoke of the accidental discovery by McDowell that opening of the abdominal cavity in tuberculous peritonitis often had a salutary effect on the progress of the disease. In order to obtain more definite notions concerning this belief, recently questioned by numerous writers, he has analyzed the statistics of the Massachusetts General Hospital from 1889 to 1900. In all 98 cases have been recorded, the subsequent histories of 59 of which Dr. Shattuck was enabled to follow. The prognosis was good in about one-half of all his cases. Twenty-eight cases were living at the present time, having been under observation for from two to eleven years.

Some patients get well under medical treatment alone, tapping and improved hygienic surroundings, but surgical intervention had given better results. Thus, of the cases treated medically at least two-thirds died, whereas of the cases treated surgically, opening, removal of fluid, removal of localized masses, etc., two-thirds recovered. Dr. Shattuck concluded that medical treatment was justifiable for from four to six weeks, but if after that time, under favorable hygienic surroundings and may be tapping, no improvement was noted, surgical intervention was imperative. Supportive and climatic treatment is called for in all stages of the disease independent of the mode of treatment.

Gold Wire in the Cure of Hernia.—Francisco (*Centrlbl. f. Chir.,* Sept. 7, 1901; *Therap. Gaz.*) has already called attention to the admirable results he has obtained in the radical cure of fifty hernias by Tansini's method of employing a wire mesh. There was union by first intention in all these cases, and the patients were gotten out in two weeks. The wire remains in the wound and forms a bulwark against the reappearance of the hernia. Francisco has now 150 cases in

all to report, and notes that the results have been equally good in all.

Since, when a foreign body, such as gold wire, in considerable quantity is left in a wound absolute asepsis is essential, and since it has been shown that neither by careful cleansing of the hands nor by the use of gloves can this be accomplished, Francisco has devised retractors so designed that the operation can be completed without either the surgeon or his assistant directly touching the raw surface. There is also a spatula employed for depressing the deeper tissues.

The Tansini operation is much like that of Bassini, except that there is left in the wound a network of gold wire, which not only approximates Poupart's ligament in the internal oblique and transversalis muscles, but remains in place and offers a mechanical resistance to the yielding of the abdomen at this point.

Solar Cautery in the Treatment of Cancer, Lupus and other Malignant Forms.—O. V. Thayer (*Pacific Med. Jour.*, April, 1902) says that during a practice of more than forty years he has not known or used any remedy to be compared with solar heat in its curative power. In the treatment of morbid growths and malignant diseases the tissues involved must be most fully destroyed or carbonized. Upon this depends the success of the operation. The tissue must be thoroughly dessicated by applying the solar heat for only five or ten minutes at one time—this dries out the fat, blood and serum. After waiting a short time for the part to cool, the application is renewed and continued from time to time until the object is accomplished. In the treatment of cancer and allied diseases by the use of concentrated sun's rays, we possess a remedy at once safe and curative, attended with little pain and inconvenience. Not more than twenty or thirty treatments are required. The wound soon heals with little trouble, and the skin is, in great measure, restored to its normal condition. The author reports several cases of malignant growths successfully treated with concentrated sun's rays.

The X-Rays in Cancer.—Dr. F. H. Williams, addressing the Academy of Medicine on this subject, said, in conclusion, that X-rays undoubtedly do good in cancer. Besides, they arouse no dread, hence patients will come for much earlier treatment that otherwise. There is no shock from their use, their employment is absolutely painless and the cosmetic results are better than from any other method of treatment. With regard to recurrence, one cannot as yet be sure. The X-rays, however, in this regard, certainly promise very well, and if there should be signs of recurrence one can promptly resume the treatment. With regard to internal cancers, the medical man is not justified in promising relief by the use of the X-rays; their employment may lessen discomfort, however, and all external cancers yield absolutely to them. Inoperable cancers will become much more rare, because in very early stages malignant growth will be submitted to the X-rays.

Treatment of Epilepsy of Alcoholic Origin by Strontium Bromide —Touraille (*Bull Gén. de Thérapeutique*, March 23, 1901) states that chronic alcoholism is able to cause all the symptoms of epilepsy in descendants of people of this class. This epilepsy in children of alcoholic parents assumes all the characters of true epilepsy. It may be characterized by simple convulsions—vertigo, petit mal or grand mal. It will yield to the bromide treatment, to which must be added an absolute milk diet or a milk-vegetable diet. Chemically pure strontium bromide should be employed to the exclusion of other bromides, because it is well tolerated by the organism, and does not produce symptoms of bromism. The dose should be rapidly increased until the diminution and suspension of the epileptic attacks is accomplished; afterward progressively diminish this maximum effective dose to an average of 30 to 60 grains daily, which must be maintained for a greater or less length of time in order to assure the result and prevent a return of the attacks, which is always imminent in patients predisposed.

Antidote for Formaldehyde.—In view of the fact that this chemical is coming more and more into general use as a disinfectant and antiseptic, cases of poisoning from it will become more frequent. We have (*Merck's Archives*) an easily accessible and reliable antidote in ammonia. It may be given in the form of ammonia water a few drops well diluted or the aromatic spirit or a solution of ammonium acetate.

Quinine as a Styptic and Antiseptic.—Marx (*Centrlbl. f. Chir.*, I, 1901, No. 45) states that as the result of his experiments he recommends quinine as a styptic and antiseptic. The styptic powers of quinine arise from the ability of its salts to agglutinate the red blood corpuscles. For practical use the best preparation is a 1 or 2 per cent. solution of quinine hydrochlorate, which should be applied to the bleeding surface with a gauze compress or tampon. Careful observation has failed to show any injury to tissues; in fact, no reaction of any kind was observed. The disinfecting power of quinine on infected wounds is but slight, but in aseptic wounds it absolutely stops parenchymatous bleeding and has the additional power of rendering innocuous any germs that may have been conveyed into the wound by the operator's hands.

A Method of Introducing the Stomach Pump.—An effective and entirely safe method of preventing nausea occasioned by the stomach pump (*Ther. Gaz.*) is that of freezing two or three inches of the extremity of the tube just prior to its introduction, the object being to secure slight temporary anesthesia of the fauces and pharynx by means of the cold rubber. In this way cold is applied exactly where anesthesia is needed, and the irritability is overcome. Thus the tube may be introduced for the first time with practically no gagging, straining or nausea. The extremity of the tube may be frozen by a few moments' spraying with ethyl chloride. The tube, of course, may be chilled in other ways, but the ethyl chloride is convenient and efficient. The tube has been found not to stiffen markedly under the influence of extreme cold, so no violence from the frozen rubber can occur. And by the time the tube reaches the cardia its low temperature is sufficiently overcome to prevent any danger to the gastric mucosa, though the tube may remain in the stomach some time.

RETROSPECTIVE DIETETICS.

Dietetic Treatment of Hyperemesis Gravidarum.—In a recent number of the *Philadelphia Medical Journal*, Dr. John M. Batten reports the successful results obtained by him in several obstinate cases which had resisted drug treatment, simply by *feeding* the patient day and night. He recommends that a glass of milk, crackers or anything else the patient may take a fancy to, should be placed on the table near the bed at night, so that she may satisfy her hunger at any time. Before rising in the morning, she should have a good, substantial meal, consisting of coffee, with eggs, mutton chops or beefsteak, buttered toast, or whatever else she may prefer. After partaking of her breakfast in bed,

she may rise, and during the day thereafter she may take about three more substantial meals. Fasting during the night, he believes, is conducive to sickness in the morning, and possibly during the ensuing day.

In the milder forms of "obstinate vomiting," says the *Alimentary Review*, the above plan will sometimes prove successful, even without the efficient aid that may now be afforded in the way of digestion-therapy. But in those graver cases when the stomach is absolutely unable to take charge of the food, and fermentation, retching, and all its disagreeable consequences follow, it will be found necessary to furnish digestive assistance. This may be done by taking the digestant with the food (or immediately after); or, if preferred, when milk is given, it may first be caroidized in the same manner as in infant- or in typhoid-feeding. This latter process will not only prevent the formation of indigestible curds, but insures thorough absorption. For this purpose, two grains of powdered Caroid (or a teaspoonful of Caroid Essence) may be added to each feeding of 8 ounces, and, when the curd has set (within two or three minutes), beat up with a fork or spoon until almost re-liquefied and feed as usual. Other foods which are allowed in a given case, should be followed by a Caroid Powder, or tablet (2 gr.), repeated at every subsequent feeding—or until the stomach itself becomes enabled to furnish secretions sufficient to digest the meal and prevent fermentation.

Corn-Meal as an Article of Diet.—Corn-meal in its various methods of preparation, says the *Lancet-Clinic*, has been regularly in use in Kentucky, Tennessee and other Southern States, mainly because of its superior nutrient qualities as observed by feeding to the negroes of that region. In that way the whites also came to be free users of corn meal in one form or another. Corn bread may be made to largely take the place of a meat diet among all classes of people, and that to their advantage. As an article of food the advantages of a corn-meal diet can scarcely be exaggerated. Those who eat corn bread are rarely if ever afflicted with any of the ordinary forms of dyspepsia, and it is one of the very best laxatives known. Persons who use corn meal rarely if ever have constipation.

One reason corn meal has not been more generally used by people of the North is to be found in the fact that there is a lamentable ignorance in the preparation of corn meal for table use. First of all, the simplest of use is that of mush. Corn-meal mush should be made by an admixture of boiling water and meal, with a small percentage of salt, this being made into a batter or mush of some consistency, care being taken not to make it too thick. Then place it in a pot over a slow fire, frequently stir, and boil for a period of not less than four hours. The boiling for this comparatively long time is the secret, and the only secret, of making a mush which is palatable, and may afterwards be eaten with milk, syrup, butter, or whatever else may be preferred. This is a very economical way of preparing a nutritious meal for any adult or growing child. Hasty pudding, so called, where the mush is brought to the boil in a very few minutes and then served, is positively injurious, and in most instances will be productive of diarrhea. This is a principal reason for the unpopularity of corn meal as an article of diet in most Northern States.

There is just as much art in the preparation of a corn-meal diet as in that consisting of wheat flour. There is also a great difference in the grades of meal that are found in the markets. There is that which is good and that which is poor, but the good largely predominates.

The Feeding of Children During the Second Year.—In a recent address upon this subject, Southworth lays down some valuable suggestions (*American Medicine*). The summer months should be avoided for the weaning period, which comes somewhere toward the end of the first year. Cow's milk should be the basis of the child's food during the second year. It is well to increase the quantity at each nursing, larger bottles, holding as much as 12 ounces, being obtained for the purpose. The bottle should be retained for quite a while as it facilitates the 10 P.M. feeding. The milk should not be taken from the bottle at all of the feedings, except during the first half of the year. At the more important meals the milk should be poured into a cup, so that the child may learn to drink it in that way. Soft-boiled eggs may be given; and bread, zwieback, and simple forms of crackers or biscuits, if the child has sufficient teeth. Of fruits, the orange is the first to be given; or rather, its juice. Prunes have the advantage of cheapness and availability. A soft-baked apple, entirely freed from the skin and hard portions of the core, constitutes the last of the usual trio of fruits. Vegetables may be added by the middle of the year; and sometimes earlier, if there is constipation. Spinach, carefully passed through a sieve, green peas, asparagus tips, and string beans, treated in the same way or mashed, may be given. Toward the end of the year stewed celery and boiled onions may be added. Potatoes, when given, should be baked and mealy. Meat awaits the development of the masticatory powers; but beef-juice may be given before the twelfth month, and in anemia is an excellent hematinic. The finely minced white meat of poultry may also be given. Southworth very properly inveighs against the custom of allowing children of this age or during the next year to come to the family table. Desserts scarcely enter into the question of feeding during the second year; and the longer they are deferred the better for the child. Tea, coffee and beer must be specifically forbidden among the poor, while the giving of candy and sweets is almost as much of a vice among the well-to-do. With due attention to proper hygiene, pure milk, and the simple diet here outlined, the much-dreaded dangers of the second summer will not materialize.

Diet in Neurasthenia and Hysteria.—When the rest cure must be enforced (N. S. Davis, Jr., *System of Physiologic Therapeutics*, Vol. VI.), the patient should be removed from home and no friends and relatives, nor any but agreeable news, allowed for several weeks to come to her. As she must be in the company of her nurse for a considerable time, one should be selected who will be agreeable to her. The patient should keep her bed for six weeks at least, leaving it only to use the vessel. It is best to begin the milk diet gradually. If a patient does not like milk, it should be given in doses of one or two ounces every two hours. Sometimes it is best to begin with skimmed milk, to use even smaller doses, and to permit the use of a little other food at meal-times. In two or three days larger amounts can readily be taken. As much as two quarts of milk ought to be drunk in twenty-four hours. In some cases food should be given even at night, as often as every three or four hours. As a rule, an exclusive milk diet quickly causes dyspeptic symptoms to disappear, but constipation persists or develops. It must be corrected by the administration of a mild laxative at night. A

cup of coffee without sugar, in the morning, sometimes helps to move the bowels. Massage should be practised each day, usually at noon, and should be given so as to help in preventing constipation. At first it must be applied gently for only fifteen or twenty minutes, the abdomen being rubbed carefully, especially along the course of the colon. By degrees a longer time, and ultimately an hour a day, may be devoted to massage. A hot sponge bath may be given in the early morning, and the clothing of the patient changed. At the end of ten days an egg or a chop should be eaten at noon, in addition to the usual allowance of milk. Weir Mitchell often prescribes earlier than this, meat-juice once or twice in the day. In another day or two bread and butter are given, and an egg or some meat at breakfast as well as at dinner. Some simple vegetable, and stewed fruit, may soon be added to the diet. By degrees the patient is thus gotten upon a diet of three simple but generous meals daily, besides three or four pints of milk. The latter is administered partly with the meals and partly between them. While the patient is upon milk only, she is not permitted even to sit up in bed. But when three meals a day are taken she may sit up while eating. At first, solid foods are cut fine, and at all times they must be eaten slowly and well masticated before swallowing. Weir Mitchell recommends the generous use of butter, and in those cases in which flesh is not rapidly gained, the administration of cod-liver oil. If swallowing the oil lessens the appetite or creates nausea, an emulsion may be injected by the rectum. When patients are first permitted to sit up, it is for a short time only. By degrees they are allowed to be up more hours in the day, but for some time after their morning bath, and again after massage, they ought to rest. During treatment the stools should be watched. If food is voided undigested, the amount should be lessened. A urine loaded with urates also indicates overfeeding. When at the end of eight or ten weeks, the patient is permitted to return home, her gain in flesh, in color, in vigor, and mental poise, is so great that convalescence appears fully established, yet recovery is not complete. The diet should still continue to be generous and simple; excitement should be avoided, and outdoor exercise encouraged. Patients requiring this treatment easily become addicted to the use of alcoholic beverages, wherefore it is often desirable to forbid them entirely.

THE NEW YORK OBSTETRICAL SOCIETY.

ACCIDENTAL HEMORRHAGE, PROBABLY DUE TO TAMPONADE OF THE LOWER UTERINE SEGMENT.

Dr. Henry C. Coe reported the following case which he wished to place on record because it was not only unique in his experience, but was, so far as he knew, the only one that had been reported.

Mrs. B. had had one child eight years before by a former husband. Her present pregnancy was complicated with intractable dyspepsia and extreme nervousness an dinability to take even moderate exercise without local pain and exhaustion. According to his estimate, labor was to be expected the last week in November, 1901. The daily amount of urine was considerably diminished at the beginning of the last month. On November 1st only 946 cc. were passed, having a specific gravity of 1021, and containing 1-43 of 1 per cent. of albumin, but no casts. The urea was 15 gm. to the liter (the normal being 13 to 18 gm.). The patient had been on careful diet and was in fair condition at the time. She contracted a severe cold and had a moderate bronchitis. This was followed by a sharp attack of diarrhea and she began to have some severe headaches. The daily amount of urine was about one liter. The report on November 12th showed an absence of albumin, specific gravity, 1009, no casts; but the urea was only 3.5 gm. to the liter, a diminution of 75 per cent. The patient had become thoroughly demoralized and decided to anticipate the time of her accouchement. The child was well developed, position R.O.A., cervix soft and patulous. A loud placental bruit was heard low down in the median line. Under light anesthesia (the patient being otherwise uncontrollable), the lower uterine segment was easily packed with gauze, not more than two yards being introduced, as the head was low down. It was not necessary to dilate the cervix, which already admitted two fingers. Quinine sulphate, grs. x, were given. She recovered from the anesthetic in a few minutes and he left her at eleven o'clock A. M. At two o'clock P. M. the nurse telephoned him to say that slight uterine contractions had occurred accompanied by a considerable discharge of bright red blood. He saw the patient at once and found that several pads had been soaked. Soon after his arrival she had a pain so severe that she made a loud outcry and said that she could not endure it. He noted that the uterus was contracting normally. The fetal heart was strong, but the placental bruit was not as loud as it was in the morning. As the oozing continued, he tamponed the vagina firmly. This caused a renewal of the agonizing pain in the back and lower abdomen. After a few minutes the hemorrhage continued as before. He thought at first that the blood came from a point in the cervix where the bullet forceps had torn out, but was soon convinced that it must come from the interior of the uterus. He removed all the gauze, found the cervix dilated so as to admit three fingers, the membranes intact and the head low down. A clot the size of the fist was expelled; then the bleeding ceased for half an hour, as well as the uterine contractions. Then a large clot came away and the bleeding continued. The patient had now lost fully twenty ounces of blood and although the maternal pulse and fetal heart were not affected, he felt sure that the edge of the low placed placenta had become detached and that it was necessary to empty the uterus without delay. As soon as assistance could be obtained the patient was etherized and the cervix was dilated manually in a few minutes. As the membranes had ruptured and the head was partially engaged, the child was of medium size, and the pelvis roomy, the use of forceps was elected in preference to version. A vigorous male infant, of seven pounds was delivered without difficulty, the entire operation consuming thirty of forty minutes. The uterus contracted firmly, but a sharp hemorrhage followed. While removing the placenta he discovered an interstitial fibroid tumor the size of an English walnut in the lower uterine segment posteriorly one-third of which protruded into the cavity. As the bleeding was not checked, the cervix was promptly exposed, pulled down with bullet forceps and a deep tear was found on the left side. This was closed with sutures of chromic gut and the hemorrhage ceased. The patient had no shock and her pulse was full and strong. She made an afebrile recovery and the child has thrived. An examination of the placenta confirmed the diagnosis, as the presence of old adherent blood-clot over its lower half showed that it had been detached. There was no laceration of the placental tissue. In passing his hand into the uterine cavity immediately after delivery of the child he satisfied himself that the placenta, though at-

tached low down on the anterior wall could not be called even a marginal previa. It is also interesting to note that there was little, if any, bleeding during the manual dilatation of the cervix and the delivery of the child. There was no doubt in his mind that in inserting the gauze he must have either separated the lower margin of the placenta, or else the gauze was pressed against it so firmly that when the uterus contracted the placenta was forced down against the tampon and thus the separation began. As the blood collected between it and the uterine wall further separation occurred and the hemorrhage, at first slight, gradually increased in amount. An interesting fact in this connection was the gradual disappearance of the placental bruit which entirely disappeared during the course of the operation. An examination of the urine two weeks after operation showed that it was entirely normal. Amount of urea, 12 gm. to the liter. The mother drove out at the end of the fourth week, the pelvic examination showed that the uterus had undergone perfect involution. The cervix was of normal size and the tumor could not be felt.

He wished to acknowledge his indebtedness to Dr. W. Jarman for his invaluable assistance, without which he felt that the case would have terminated less successfully.

Dr. Abram Brothers met his first experience with accidental hemorrhage after seventeen years of practise, occurring in the case of the wife of a doctor who was pregnant for the first time. One evening he was called up on the telephone and informed that she was seven months pregnant and that she was losing some blood. When he saw her she gave the picture usually met with in internal hemorrhage. The case appeared to be one of normal pregnancy but the abdomen was distended, there was marked anemia, and the pulse was found to be small and rapid. Examination showed dilatation of the os. A diagnosis of internal hemorrhage was absolute from the history and the picture presented. The patient's condition was low and the only thing to do was to empty the uterus. Dilatation under anesthesia was slow and difficult. When the uterus was partly opened a good deal of blood appeared; the hand introduced into the uterus could feel the entire cavity of that organ, between the membranes and the uterine wall, to be filled with large clots and liquid blood. The membranes were ruptured, version performed, and the child was delivered, all being done in three-quarters of an hour. Transfusion was found to be necessary. The next morning the pulse was 150 and she was exceedingly feeble. During the succeeding days there was no temperature but she developed a femoral thrombosis and it was two or three months before she fully recovered. The child was lost. Later she again became pregnant.

Dr. Malcolm McLean said he would like to hear Dr. Coe comment upon the presence of uterine fibroids in cases of accidental hemorrhage.

Dr. Henry C. Coe said that the case cited by Dr. Brothers illustrated the gravity of concealed accidental hemorrhage as compared with those in which the blood escaped from the uterus instead of remaining within the cavity. The sudden distention of the organ added an element of shock which was entirely out of proportion to the amount of blood lost. Such a case occurred in his practise over ten years ago, in a primipara, who was in the first stage of labor at term. The accident was promptly recognized and the patient was delivered without undue delay, of a dead child, but succumbed to shock, although the actual loss of blood was less than in an ordinary post-partum hemorrhage. The cause of the placental separation was never discovered.

Replying to the President's question as to the influence of the fibroid in causing the separation he said that it occurred to him at the time that there might be some direct connection between the two conditions, but he was unable to trace it. The placenta was in the anterior wall, the tumor on the posterior. The uterus contracted perfectly after it was emptied.

RAPIDITY WITH WHICH GONORRHEAL INFECTION MAY TRAVEL FROM THE UTERUS TO THE TUBES.

Dr. Henry C. Coe proposed that this subject be discussed because he now has a patient under observation who was infected not more than six weeks ago. Eight days ago he operated upon her and he said that he had seldom met with a more solid exudate, even in old chronic cases. She had always been well and had been married but two months. As there had been no evidence of peritonitis he was surprised to find such general adhesions in addition to a double pyosalpinx. Both ovaries and a portion of the tube were preserved. The patient made an afebrile recovery.

Dr. Herman J. Boldt said he knew of a few instances in whom, within two or four weeks after infection with gonorrhea, disease of the tubes as well as of the pelvic peritoneum, and a very large exudate were present. He asked Dr. Coe what the operation he referred to consisted of.

Dr. Coe replied that there was present a double pyosalpinx for which he operated. Both ovaries and a portion of one tube were preserved.

Dr. Boldt confessed that although formerly he did a rather radical operation in these instances, careful study and reflection had caused him to hesitate in proceeding with this somewhat radical procedure. In instances of acute gonorrheal infection, with specific pyosalpinx, he preferred doing a vaginal section, with drainage, keeping the patient under observance for some time; then, if a complete cure was not accomplished, a more radical operation could be performed per abdomen. His experience had been in cases of acute gonorrheal infection that the disease, in the course of time, under conservative procedures, would go into a quiescent state and the patients make comparatively good recoveries without resorting to abdominal surgical intervention. Regarding the rapidity with which the infection traveled he remembered one case of a person infecting his wife immediately after marriage and, two weeks later, she had an extensive suppurative disease of the tubes and pelvic peritonitis.

Dr. Abram Brothers said that in considering the treatment to be pursued we should always take into account the different forms of gonorrheal infection within the pelvis. The vast majority of cases of infection beyond the uterus (a mucopurulent salpingitis, or acute pelveo-peritonitis) may resolve of their own accord. He knew quite a number of instances of pelvic exudate due to gonorrheal infection which disappeared without surgical intervention. Some of these cases were due to gonorrheal infection producing a salpingitis, mucopurulent in character; and even in cases with pus formation he was satisfied that absorption could take place, but only, of course, when the amount was small.

Dr. Coe said that the operation was done principally on account of the persistent and unbearable pain which was exactly like that of an ectopic gestation; on account of the suspicion of the possible existence of the later condition he transferred his patient to the hospital and operated without delay. The usually diagnostic vaginal section was negative because of the thick pelvic exudate.

Dr. Herman J. Boldt said that he, too, had made a

doubtful diagnosis of ectopic gestation on account of the existence of such marked pain and the history resembling many instances of ectopic gestation. Operation showed the presence of a suppurative salpingitis with pelvic peritonitis which was proven to be of specific origin.

GLEANINGS.

Imperative Conceptions.—Hugh T. Patrick (*N. Y. Med. Jour.*, Sept. 17, 1901) reports 19 cases of various forms of imperative conceptions which he describes to be "ideas, mental impressions or emotions, nearly always painful or disagreeable, morbid in their intensity and in the persistence with which they recur in spite of the wish, will and unimpaired judgment of the patient." He divides them into two classes—phobias and the doubting or questioning pschores. In many cases both fears and doubts are present. They should not be confused with hysteria, hypochondria, neurasthenia or insanity. Patients often shrink in horror from the thoughts their minds impel. Those fearing they may jump from high places or commit suicide, etc., never do. Prognosis is affected by three factors, namely: (1) the character of the imperative conception; (2) the intensity of the trouble, and (3) the disposition of the patient. Those confirmed cases of the doubting, questioning or reasoning psychosis, the *Grubelsucht* of the Germans, seldom recover. The phobias may be cured or relieved. Like the tics, the earlier they are treated the better the outlook, but it must be remembered that they may be combined with the graver psychoses or terminate in them. In treatment one must have an intimate knowledge of the malady and the individual. A systematic course of reëducation is essential, since imperative conceptions are but mental tics. Explain to the patient that it is not an insanity. Teach him to control by reason and judgment.

The Toxicity of Alcohol.—P. Cololian recently published in the *Journal de Physiologie et de Pathologie Générale* (*Mod. Med.*) the results of a number of experiments for determining the toxity of the various alcohols. The results show that all the alcohols are powerfully toxic, and that their toxicity increases regularly with increase of density and of volatility.

Methylic alcohol (CH_4O) was found to be least toxic, the other alcohols arranged in the order of their toxicity being as follows: Ethylic (C_2H_6O), propylic (C_3H_8O), butyric ($C_4H_{10}O$), amylic ($C_5H_{12}O$).

In the experiments the alcohol was added to the water containing the fish which was the subject of the experiment. The mortal dose of ethylic alcohol was found to be ten to fifteen parts of alcohol to one thousand parts of water. One-half part of amylic alcohol to one thousand parts of water was found to be sufficient to produce death.

In the face of such facts as these it seems idle to to discuss further the question of the food value of alcohol. if ethylic alcohol is a food, then methylic alcohol, wood spirit, and fusel oil are also foods. All the alcohols belong to the same family of chemical substances, and are possessed of practically identical properties, only differing in the intensity with which their characteristic effects are manifested.

Cololian also points out the interesting fact that while other poisons, such as nicotine and atropine, are wholly innocuous to certain classes of animals, as rabbits and goats, for example, alcohol is a universal poison. It kills every living thing. Darwin, in his experiments upon insectivorous plants, shows that alcohol is also highly toxic to the drosera and other plants, the vapor of alcohol alone being sufficient to paralyze the activities of vegetable life, and even to destroy it when the plant is exposed to its action for several hours.

Local Anesthesia with Twenty-five per cent. Alcoholic Cocaine Solution.—Wroblewski, of Warsaw, (*Fraukets Archiv f. Laryngol.*, Bd. XII, Heft 3) has made use of a solution of this character in all the usual surgical procedures about the nose and throat with gratifying results.

To make a solution, the alkaloid is first combined with a few drops of water, then the necessary amount of alcohol added. Or alcohol may be mixed with the alkaloid and mild heat applied.

In more that fifty cases in which Wroblewski has used this solution in children and adults, he has not observed any of the disagreeable symptoms which frequently follow the use of the watery solutions. He found the anesthesia was more complete, more quickly attained, and in every way more satisfactory. He expresses the opinion that probably the alcohol acted in a measure as an antidote to the constitutional effect of the cocaine.

The solution is applied by means of a cotton applicator, two or three applications at intervals of one or two minutes. At the first application there is a transitory burning sensation. In the case of very sensitive patients this may be overcome by first applying to the part a five-per-cent. watery cocaine solution.

The advantage of the alcoholic solution from the standpoint of asepsis is not to be overlooked.

Toilet of the Newly-born.—The following routine is recommended by Riva-Rocci (*Gaz. Med. Ital.*, Jan. 31, 1902; *Med. Age*): (1) Insert the little finger in the mouth as far as the larynx and remove any mucus or foreign body there. (2) With 1-in-5,000 solution of perchloride and a tampon of sterilized wool wipe the outer surface of the eyelids; with a second tampon rapidly moisten the conjunctival sac with a few drops of this solution, and carefully dry the external parts; as a rule no reaction occurs beyond a slight redness for a few hours. (3) With a third tampon cleanse the anterior nares; gonorrheal infection here is not uncommon and is very intractible; a nasal douche has been suggested, but it has its risks, and the author considers the other method efficient. (4) The bath should be of clear water; alkalies, soaps and disinfectants are all irritating to the infant's skin; the only addition permissible is Unna's superfatted soap; the bath should be at a temperature of 95° F., so as not to produce cutaneous hyperemia and consequent nerve symptoms. In one case only is a hotter bath permissible, namely, in an asphyxiated child in whom the ordinary means of stimulating respiration have failed; it should then be given at 100° F.; the bath may last ten of fifteen minutes, if needed for cleansing. (5) Dry the child with warm cloths, but not too hot, a mistake often made; for rapid drying sheets of absorbent cotton are excellent. (6) Powder the child with a fine absorbent powder, perhaps sterilized; an excellent one is Venetian talc and powdered starch, of each 1¾ ounces, crystallized carbolic acid, ¾ grain, essence of lemon, 10 minims; the whole affair should be evenly powdered, avoiding excess at any part.

Harmless Albuminuria.—Wm. Osler (*N. Y. Med. Jour.*) records a number of interesting cases of men past fifty who were found to have albuminuria and an unfavorable prognosis given accordingly, who, neverthe-

less, survived this discovery for many years. He concludes that at this period of life, albuminuria, or even the presence of a few tube casts in the urine, is not at all infrequent and not always serious. They are, however, always danger signals and should be warnings to "go slow," especially as regards the quantity of food eaten. The points on which one should lay special stress as indicative of serious disease are:

1.—Persistent low specific gravity of the urine, 1.008 to 1.012.

2.—The state of the heart and arteries. Marked sclerosis of the peripheral arteries, with the apex beat of the heart an inch or two outside of the nipple line and a ringing, highly accentuated aortic second sound.

3.—The presence of albuminuric retinitis.

The Significance of Blue Pigment Spots.—Dr. Baelz, a German physician in Tokio, who has been repeatedly decorated by the Mikado, upon whim he has attended, seems to have made a discovery of great interest in anthropology, says the *Nation*. Others before him had noticed the blue spots which Japanese babies have on the lower part of their spine and elsewhere, and which usually disappear before the age of six, but no one before him, so far as is known, had interpreted and set forth this phenomenon as a peculiarity of the yellow race in contradistinction to the white race. In Korean and Chinese children, in Malays and Eskimos, these blue spots have also been found. They are not visible on European children, but the pigment cells have been found microscopically. Dr. Baelz says: "The white, the yellow, and the black man have all the same kind of coloring matter in their skins; the difference is only a matter of degree. In the white the pigment does not show, or hardly shows at all, to the naked eye; in the yellow it is is a little more abundant, hence the yellow tint; and the more abundant it is, the darker the skin will look until we reach the negro. In Euro-Japanese children, if the offspring resembles the fair-haired, blue-eyed parent, it has no spots at all; if the influence of the Japanese and the foreign parent is about equal, the spots are there, though more or less indistinct. But if the Japanese characteristics prevail generally, the spots are almost as well marked as in a Japanese baby. While apes have the same blue spots, and certain monkeys blue callosities on the buttocks, Japanese children have sometimes one-half of their bodies covered with them. Dr. Baelz believes that the blue spots form a most important racial characteristic, and will not acknowledge that the configuration of the eyelids or of the earlobes is of anything like equal value.

New Method of Resuscitation.—M. Ogata and J. Futagawa (*Sei-I-Kwai Med. Jour.*) recommends what they call the stroke resuscitation for asphyxia, and the shaking resuscitation for anesthenia. The former consists of a light stroke over the antero-inferior margin of the chest with the palmar side of the extended fingers repeated ten to fifteen times a minute. The respiration is stimulated, the heart's action excited, and the circulation accelerated. Shaking resuscitation is performed as follows: The feet of the child are grasped by one hand and the shoulders held by the other; the trunk is gradually raised, and the head brought near the feet, the body being strongly flexed at the hip-joint, while the chest is pressed with the hand. The head is then raised, the trunk gradually extended, and the child returned to its former extended position. Thus expiration and inspiration are secured. Should a repetition of this procedure be fruitless, after a moment's pause in the second posture, the hand on the back is suddenly removed, the upper part of the child's body being thus thrown down and shaken. This should be done eight or ten times a minute, and a warm bath given after each eight or ten shakings. The authors claim that this method of resuscitation surpasses all others.

Castration by Application of Steam to Uterus.—Pincus (*Centrlbl. f. Gynäk.*, Feb., 1902) recommends atmokausis as a simple and effective method of abolishing the menstrual function in cases of incurable affections in which the patients are otherwise doomed to a speedy decline. He describes two cases thus treated. One was a young consumptive, a II-para, the other in Bright's disease, a IV-para, 32 years old. Both had had extremely severe post-partum metrorrhagia at their deliveries, and the indications for the avoidance of future pregnancies were vital. The patients were at the prime of the procreativé age and the suspension of the procreative faculty and also of the monthly loss of blood was an indispensable condition for long survival. This was accomplished without pain or danger by the application of steam at 115° and 112° C. for a minute in the second case and at 110° for forty seconds in the first, repeated later for forty seconds. No narcosis, no discomfort or disturbances of any kind were noted. Menstruation has not occurred since in either case. The uterus is completely atrophied and obliterated above the internal os. The function of the endometrium of the fundus is destroyed, but the cervix is intact, and it is possible that a cervical menstruation may still occur.

THE MICROPHONOGRAPH.

A combination of the microphone and phonograph has been invented by a professor of physics in Switzerland which increases the intensity of sound at the same time regulating it and graduating it at will, doing for sound what the microscope does for objects. The acoustic exercises by means of this instrument makes the education of deaf mutes possible at a very early age. The exciting of the auditory nerves leads directly to the reviving of the sense of hearing and stimulates the utterance of words. Most encouraging results have followed the use of this instrument.

SACCHARINE.

The French Legislature have recently passed a law prohibiting the use of saccharine and all other artificial sweetening with the exception of such kindred substances as are used in pharmacys.

RESUSCITATING POWER OF LIGHT.

The extraordinary resuscitating power of light received a very curious illustration a few years ago in the silver mines at Laurim. A mine had been abandoned more than two thousand years, and an enterprising Briton discovered the seed of some poppies beneath the slag of a species which had disappeared for twenty centuries. When the slag was removed to the furnace, in a short time the entire space was covered with the most gorgeous show of poppies. After their twenty centuries' rest they had bloomed as vigorously as ever without the air or a single drop of water or any other restorative than the rays of the sun.

—Dr. Burggraeve, the founder of the Dosimetric method of practice, died in Ghent, in Belgium, at the age of ninety-five years. He had held in succession the chairs of Comparative Anatomy, Human Anatomy and Surgery, at the University of Ghent.

MISCELLANY.

—Always direct that iodide of potassium be taken in milk. Large doses are then well borne.

—It is announced that two foreign universities for women will be open next year—one at Tokio and one at Moscow.

—Physicians in the French Chamber of Deputies are said to number 43. Of these 23 have been re-elected and 15 are newly appointed.

—Dr. Henry Carson, of Forest City, Pa., is dead at the age of 108. He continued to practice his profession up to last October.

—When a urinary antiseptic is needed try lithium benzoate. It is eliminated through the kidneys, increases the flow of urine and sedates the urinary tract.

—When chilly from exposure, breathe very deeply and rapidly and the increase in bodily warmth will be surprising.

—Guatemala has the highest death-rate of any country in the world, 41 per 1,000. In New Zealand the mortality is only 11 in the 1,000.

—Camphor should be dampened with alcohol when it is desired to powder it. Then it can be rubbed into an almost impalpable powder.

—Always be on the lookout for "walking typhoid." If a man comes to you "feeling sick" be sure and take the temperature and inspect tongue and abdomen.

—In Europe smoking is growing so rapidly in favor among the fair sex that on some of the Belgian railroads smoking compartments are to be provided exclusively for women.

—The late J. Lewis Croser left $500,000 to establish a hospital and home for incurables in Chester, Pa. Dr. D. P. Maddux is working out the details of the hospital, the corner stone of which was recently laid.

—When the grass is mowed use the damp grass for the carpet in the same way as you would employ tea leaves. The grass revives the colors in a wonderful way, and removes all spots and dust.

—There are one million blind people in the world. The largest proportion is found in Russia, where nearly 200,000 walk in darkness. The chief causes are bad ventilation and inadequate treatment. In the world there is one blind person to every 1,500 inhabitants.

—Boy or Girl—Which Will It Be?—If the expectant mother walks slowly, flat-footed, has sunken eyes, and craves oysters, it will be a boy. If she walks quickly, with elastic gait, has full eyes and craves sweetmeats it will be a girl.

—Ten to twelve parts of water and one part of ammonia will preserve soft rubber any length of time. Keep rubber pipes, etc., in a glass jar filled with the above solution. Use for your ammonia bottle a rubber stopper; it is better than a glass stopper.

—According to the *Montreal Med. Journal*, cimicifuga is a practical specific, not only for soreness, but in muscular aching or pain from whatever cause. If fever is present, its effects are much more certain when combined with aconite.

—Pharmacists of Paris have been forbidden by the courts to diagnose ailments or to prescribe medicines to any of their customers. A druggist who diagnosed and prescribed for kidney troubles was fined 50 francs and costs, in spite of the fact that both diagnosis and treatment were correct.

—Dr. L. D. Bulkley says that for some time past he has prescribed ichthyol by the mouth, 10 to 15 drops, in capsules, three times daily, and finds that this, through its action on the liver and intestines, will cure nearly every case of hemorrhoids. In fact, he looks upon its internal use as a specific.

—The Peter Bent Brigham Hospital corporation was formed May 8, under the will of Peter Bent Brigham, who died twenty-five years ago, leaving his estate in trust for hospital purposes. This trust expires on May 25, making $4,000,000 or more available for a new hospital in Boston. Brigham for a generation kept a concert hall in Court street.

—Dr. Gaetano's tests have convinced him that a 20-per-cent. alcoholic solution of acetic acid is the most efficient disinfectant at our command for the treatment of wounds. In addition to its power of antisepsis, this mixture presents the very great advantage of making the wound as dry as possible, which in itself renders invasion by germs unlikely.

—The report of the Board of Agriculture for 1900 (*Med. Rev.*, Oct., 1901) shows not a single case of rabies, in either England or Scotland. It may thus be said to have been eradicated. These results are due to enforced muzzling, the value of which can be seen from the fact that France has 2,000 or 3,000 cases per annum, and that in Italy and Belgium under like sanitary precautions the disease is increasing.

—Neumann's further experience in artificial sterilization has confirmed the efficacy and harmlessness of this method of preventing conception in phthisical women. The point of insertion of each tube in the uterus is drawn out in turn through a buttonhole in the peritoneum, and a wedge-shaped piece excised. Very little chloroform is needed. Menstruation is retained, while conception is absolutely prevented.

—Several sufferers from writers' cramp are reported to have obtained great relief by becoming enthusiastic golfers. This game requires the use of the upper extremities just to the degree adapted to people who have lived a sedentary life. The movements are necessarily co-ordinate, and they are combined with proper exercise of the lower extremities, and a large amount of time is passed in the open air.

—An institution in which light treatment will be a notable feature has been established in Vienna through the agency of Professor Lang and a number of physicians and philanthropists. It is modeled on the institution of Professor Finsen at Copenhagen. The Emperor, who is one of the founders, has donated 10,000 crowns toward its maintenance. The institution will be partly under the control of the municipality.

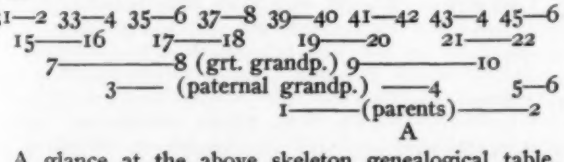
—There is a remarkable coincidence (*Med. Times & Hospital Gaz.*) between the spread of cancer and the largely increasing consumption of effervescent wines and waters. Prior to the sixties, champagne as a drink was used but occasionally, nor were aërated waters consumed in anything like the quantity or frequency that they are now. The upper classes by constantly imbibing effervescent beverages, solutions of carbonic acid of greater or less strength, so prepare their mucous tissues as to make them a favoring host to the cancerous fungus, if fungus it be.

ORIGINAL ARTICLES.

HEREDITY.

BY A. L. BENEDICT, M.D., BUFFALO.

PHYSICAL and mental heredity is a subject which has, within the last generation, received much attention, yet there remains concerning it a vast amount of ignorance and a still more deplorable misconception. Every thorough medical history—unless the trouble is obviously of external origin—as, for example, a broken leg or a case of scarlet fever—contains a paragraph devoted to the possibilities of heredity; and if, in a numerous family, the maternal grandmother, a parental uncle, and a brother or sister of the patient are found to have suffered from the same complaint, a family tendency toward this disease is inferred. Many persons go through life feeling that insanity, consumption, or cancer hangs over them like the sword of Damocles, and, if any such do become the victims of these not uncommon diseases, the most skeptical relative is convinced that he himself is liable to the same doom. Yet cancer is to be thought of in the case of almost every middle-aged or old patient whose disease has come on insidiously; tuberculosis is responsible for about one-quarter of all deaths save those from old age, the weakness of early infancy, and violence; insanity may be caused by the trials and griefs to which every life is subject; and one can scarcely imagine a more probable source than the settled conviction—however falsely grounded—of the existence of a family tendency. On the other hand, a study of hereditary traits judiciously undertaken, without morbid apprehension and with the realization that the good may be cultivated and the evil averted, is the duty of every individual mentally and morally responsible to himself and his fellows; in short, of every one who may take to himself the injunction, "Know thyself."



A glance at the above skeleton genealogical table, carried out to paternal great-great-great-grandparents and to maternal grandparents, will show what a composite mass of heredity A must be. Since, except for the intermarriage of cousins, the number of ancestors increases geometrically by 2 in each generation, it is evident that a family tendency to disease must operate within a very few generations or must lose itself in the ocean of humanity, like a wave moving in a widening circle from the point at which a stone strikes the surface of the water. When we consider that a male child is rather more apt to inherit his mother's characteristics, and she, in turn, her father's (odd numbers in the table representing males and even numbers females), we must admit that a medical genealogy should pass in an irregularly zigzag line, with corresponding changes of surname. If we assume a family tendency to disease to exist, one of two results must follow: the family must either become extinct, or the tendency must become so attenuated as to be annulled by the infusion of fresh blood through intermarriage. But, if we grant this, our original assumption is a bull of the worst kind, for we can scarcely conceive of a family characteristic of any nature as developing suddenly in one generation; while the gradual development of a self-destructive tendency is an absurdity. We may suppose—and must—that certain families are weaker or stronger than others and thus more or less liable to disease in general; that longevity differs in different families; that non-fatal diseases or those which develop after the reproductive period of life tend to affect certain families rather than others; that physical and mental traits may be transmitted: but we might almost as well speak of hereditary sterility as of a family tendency to a destructive disease. This, however, does not mean that a sickly father or mother may not transmit a predisposition to offspring, but simply that a family, in the broad—and long—sense in which the word is used by genealogists, can not be branded with a fatal tendency.

Such traits as an aquiline nose, an exceptionally clear or coarse complexion, large bones, hirsuteness may be traced for many generations, or may skip one or two generations to reappear farther down the line. Mental peculiarities may be similarly transmitted, with occasional generations of latency. But latency may be apparent and not intrinsic. For example, let us say that mental acumen has manifested itself in the surname-line, 31-15-7, but that 3 and 1, on account of poverty, have had no opportunity to show their mental quality. A, inheriting money from his mother, 2, acquires this opportunity and may make himself as prominent as his great-grandmother and ascendents in that line. Intellectual powers may also be held in check by physical weakness. For example, 7 may, by too early marriage, youthful excesses, or other cause, fail to transmit to 3 and 1 the physical basis for developing the mental potentiality which they rightly inherit, through 7, from 31 and 15. 1, himself apparently lacking in mental ability, marries 2, a girl of robust physique and practically without intellectuality, so that, from this unpromising union, A derives the animal strength of his maternal line and is able to regain the mental superiority of the surname line, 31-15-7-3-1, which was "latent" through sheer weakness in 3 and 1.

The marriage of cousins is by no means the unmitigated evil which it is sometimes supposed to be. If A's parents are cousins, he has six instead of eight great-grandparents, and two of the six have the same probable influence on his development as the other four. That is to say, any trait, physical or mental, good or bad, is twice as likely to be transmitted from either of these two progenitors as from any of the others. Hence, if the common grandparents of 1 and 2 are exceptional, either in strength or weakness, A is correspondingly favored or threatened. In case the relationship between 1 and 2 is a double one, A has only four instead of eight great-grandparents, and his heredity is still more limited. We must also recognize the possibility that 1 and 2 may inherit predominant characteristics from the unrelated progenitors, so that their cousinship will have practically no influence on A's development.

Physical and mental resemblances between persons supposedly quite unrelated may be explained by a study of genealogy. In a case known to the writer, A has a marked resemblance in features and some habits of thought and action to a man descended from the line 7-17-35, but dating back one or two generations farther for a common ancestor. 1 does not show this heredity of features, but it is manifest in one or two of his generation and in some of their children, A's cousins.

What little truth there is in the old saying about ministers' children may perhaps be explained by a closer study of heredity. In some families there is a hereditary devoutness, indicated by the frequent occurrence of deacons in several successive generations. In

some particular generation an intermarriage adds to the devotional element the elements of self-confidence, executive ability, and power of expression, so that the next generation produces an exceptionally able minister. But the latter, taking a wife from a family characterized rather by worldliness than by devoutness, transmits only those of his qualities which go to make up a brilliant politician or man of the world, so that his son's moral life is apt to be quite the reverse of his own, while the close resemblance in purely intellectual endowments is overlooked.

In tracing heredity, we must not forget that, wilfully or through ignorance, such misleading factors as adoption, illegitimacy, and step-parentage may creep in. Thus, we might cite a case in which statistics are being gathered to show the influence of heredity on physical development, and in which a person really of uncultivated foreign grandparentage, has stated the grandparents to be of quite opposite characteristics, relying on a legal adoption in the last generation. In many instances, children grow up supposing themselves to be the actual offspring of parents by adoption, especially when the adoption is of a step-child. Again, old records may mention only one of the wives of an ancestor, and marked traits may be inherited through an ancestress whose very existence is unknown.

It must also be considered that habits of mind and body, physical defects, and strong tendencies of various kinds may be simultaneously developed in a family without the slightest action of anything deserving the term heredity. In fact, it is the repetition of habits and modes of life that gives origin to new hereditary traits. A family for two or three generations may be conspicuous for near-sightedness, while another may be famed for the strength of its vision. The natural explanation is heredity, but, in the one case, a good library in poor print, false economy in the way of artificial lights, and a mutual encouragement of habits of reading may have rendered a majority of the family dependent on lenses, while, in the other instance, a grandfather's devotion to rod and gun and dislike of scholarly pursuits may have been inculcated by mere force of example and influence on the next two generations of the family, when perfect eyesight would be a logical result. So, too, inebriety, hysteria, bad temper, ambition, literary or scientific tastes may descend for two or three generations simply because each successive generation has been trained or forced into the habits of the one preceding, perhaps even in opposition to tendencies inherited from other ancestors. The reader may well ask, to what extent is it allowable to explain away an apparent heredity? True it is that environment, habits of thought and action, development or decadence of powers of special sense or intellection, even the ravages of disease or the results of injury, as well as other extrinsic circumstances, may fasten onto a family traits that tend to repeat themselves in succeeding generations and thus to become genuinely hereditary. Without attempting a formal definition, it may be said that the following are crucial tests as to the genuineness of heredity: the transmission of characteristics to all or most of the next generation; the transmission through more than one generation, especially to persons related only collaterally with one another, as first and fourth cousins; the persistence of traits in spite of environment and circumstances opposed to their development.

When we come to the matter of actual disease, the simple explanation of heredity must be received with hesitation. It is plainly not inheritance if a child contracts diphtheria from its father or mother. Neither is it proper to accept the theory of heredity without question in the case of a disease like consumption, which is certainly communicable, though less rapid in development than diphtheria. The writer might cite the case of a family of six, of whom the father and three daughters have died of consumption. At first sight, a more typical instance of tubercular heredity could scarcely be imagined, but it is significant that the deaths have been separated by an interval of a year or two, that each victim has succumbed only after being exhausted with the care of the preceding, and that the one surviving daughter, though not robust, or careful to observe hygienic precautions, or free from inflammatory diseases of the lungs, was relieved of attendance on the sick because of her employment as a teacher until the time when she married and left the family home. If we accept the theory of heredity, we have no explanation of the delay of its manifestation till all the children had reached an early adult life, or of the quite regular succession from patient to nurse, or of the escape of a woman physically liable and presumably, at least, sharing the hereditary tendency. Contagion, on the other hand, affords a complete and satisfactory explanation of the whole family history.

Gout is a disease often, and doubtless correctly, mentioned in connection with heredity, yet in many instances we may well ask whether the physical tendency to gout has been inherited or whether the inheritance has not been money and the temptation to dietetic excesses. It is not uncommon to find families in which gout was the family foe up to the generation that migrated to America. A study of the difference between the life of the family in the old country and its life in America leads to the conclusion that it is just about as rational to speak of an interrupted heredity in such instances as to ascribe the sudden remission of the gouty tendency to the protective tariff which was encountered on landing in this country.

The writer does not wish to be understood as saying that there is nothing in heredity. On the contrary, there is so much in heredity, the influence of ancestors on descendants are so numerous and so complicated, that problems connected with this subject can be solved only when limited to the most simple conditions. Every stream, whether of blood or of water, is influenced by every other that flows into it, and often to a greater degree by tributaries than by the head waters of what we consider the main stream. As well might we seek in the Mississippi above the Missouri the cause of the clay-stained waters of the lower river, as ignore maternal influences and limit our studies of heredity to a surname.

Characteristics of form and function, of features and intellect, are largely dependent on heredity. Disease is something extrinsic and abnormal. Liability to it depends either on general weakness or on special predilection. It certainly can not be the rule that that which renders heredity impossible can become a permanent hereditary trait. Before connecting disease with heredity, it must be shown, first, that ordinary extrinsic causes are inadequate, and, secondly, that—excluding the possibility of direct infection from one member of the family to another—the family in question manifests far more than the average tendency to the particular disease.

In discussing this topic we must frankly admit that all men are not born equal, save in the right to fair treatment by the rest of humanity, and that, while it is right and proper to demand and render respect according to individual attainments and ability, it behooves us to seek out of the dim past whatever information is ob-

tainable of the progenitors who have not only given us life itself, but perpetuated their own features and ideas in the vast composite of the present generation.

STUDYING NERVOUS CASES

BY M. R. WILLIAMSON, M.D.

IN examining a patient who presents himself for diagnosis in nervous diseases, the first thing to be noticed is the appearance of the man's face. Frequently we will find a large part of the solution of the problem right in his face. For example, are the lines on his face as well marked as they should be? Is one side of the face apparently more developed than the other? For instance, the man whom I will take for illustration has a look of sleepiness and the wrinkles on his face are smoothed out. The man has no past history that can throw any light upon the present condition. The man is a machinist by occupation, his business being that of putting together piping, which must be done very accurately. He is thirty-six years of age, and he was well until a year ago, at which time he found himself obliged to give up his accurate work entirely. He has since been working at a less difficult business. It is necessary to stimulate him in order to make him speak so that he can be understood. A week ago he had a stumbling speech so that he could not pronounce his ps and bs clearly. There has been a distinct loss of memory which was a second symptom following the loss of precision and accuracy in his work.

If we are to examine this patient in a systematic way, it is well to examine next his station. It is not exactly normal, and yet it is quite good. Next, let us see whether there is any local weakness of the legs. Does he stand equally well upon either foot alone? We find that this condition is fairly good, nor is there any marked impairment in the strength of his arms. On asking him to walk, especially with his eyes closed, it is possible to note that he scrapes his legs a little, but it is merely a suggestive symptom, and may be due more or less to embarrassment. On testing his hands for tremor, we find that he has none, and his grip seems to be about normal. In examining him for loss of knee jerk it is well to use Jendrassicki's method, which is for the patient to grip the hands tightly, and then for the physician to tap on the patella. On the right as well as on the left there is no response to his reflexes. On examining his eyes we notice that the pupils are unequal in size. The larger of the two does not react to light, showing the existence of the Argyl-Robertson pupil.

On taking up the analysis of this case we find that the cerebral action is slow and dull. Are the mental changes quantitative or qualitative? Has the man a distinct loss of faculty or only a diminution? Undoubtedly in this case we have nothing but a quantitative change, the man merely having a mental impairment, or, as it were, a mental diminution. Can we say that this disease is one of posterior sclerosis, tabes, or some closely allied disease?

On looking at the man's tongue we see that there is some tremor and some pouting of the lips. Can this be tabes? There is not a history of long lagging pains. There is no gradual pain. There is no difficulty in walking, especially in the dark, while we frequently get the history that when the patient washes his face in the morning in this disease he falls over the basin. But there is no such history in this man. We have in this case the Argyl-Robertson pupil, slowness or an imperfection of enunciation. For example, in attempting to use such a word as "artillery" he drawls it into "rolly." The question comes up whether this man is a paretic. Now, paresis is known under various names, such as paralysis of the brain, progressive general paralysis and paretic dementia shows itself in various forms. In many cases there is simply a mental impairment which as it goes on grows more pronounced. In this disease we have the peculiarity of a slowly approaching dementia, with such symptoms as loss of knee jerk, mumbling of speech, tremor of the lips and tongue and the Argyl-Robertson pupil. We have in some cases a marked exhilaration; in others, a marked melancholia. When the exhilaration exists it is generally complete. The patient is filled with expansive ideas. He is the ruler of the world, or the conqueror of nations, while if he is a melancholic he is in the state almost of mental collapse. It was formerly regarded that the expansive state was a necessary part of paresis, but this is no longer believed; in fact, in a large percentage of cases there is neither depression nor expansion. Such a form is the present which Dercum describes as the quiet form, or, perhaps in better terms, the "simple form of paresis."

In this man's history there is no report of any special amount of worry or dissipation, and he denies any history of syphilis. This is the disease which is uniformly called by the laity "softening of the brain," and it is a true description, for the brain loses its power of existence and becomes softened, there being a wasting and degeneration in the nerve elements. The membranes become granulated, involved and adherent to the cortex. Some writers have referred to paresis as "tabes of the brain" but there is considerable question as to the propriety of such a term.

When it comes to the treatment of such a case as this the time-honored formula has been the use of iodides and mercury. Whether the changes are syphilitic in character or not, the iodides may relieve the case if they do not cure them. We know that the lymph spaces in the brain as well as the blood vessels lay in the perivascular loops, and the iodides clear up these spaces so that the patient for a time improves. In fact, the improvement may be so great that a genuine remission may appear, which may last even for years. Some physicians have made the rule of using mercurials, and frequently good results are obtained by putting a patient at this stage through a course of mercurial inunctions.

Taking up another case, we see that of a man of 70 years of age who, apparently, was well until six months ago, when he lost his position as the result of some dizziness, on account of which he suffered severely. Fearing that he would not be able to keep his home he became very nervous and excitable, so much so that he did not want a fire in the kitchen range for fear that his house would burn down,or that there would be too much heat, or that the boiler would burst. He slept pretty well, but reports that he dreams a great deal, sometimes pleasantly, sometimes unpleasantly. Sometimes he imagines he hears people talking about him, and when awake he hears them say unpleasant things about him. He sees things that do not look right to him, that do not seem the same as they were at one time. He does not remember as well as he did. He forgets things he laid in certain places. He is not careful about his personal habits as he once was. These changes are probably all qualitative in character.

The physical examination of this patient is entirely negative. There seemed to be no changes about his person in any way, excepting possibly that the temporal arteries on either side are pretty well marked and quite resistant to the finger. In the wrist they are not only

resistant, but quite beady as well. Here we have the changes in the blood vessels which are characteristic of old age, while the examination of the heart reveals accentuation of the second sound, suggesting arteriosclerosis. His urine has not been examined as yet. In the past few months this man's ideas have grown into actual delusions. He fears that he is going to be arrested, and he has begun to have delusions of persecution. These hallucinations of hearing and sight are rather unsystematized. Considering his age, we would undoubtedly pronounce his case one of senile dementia.

In the next case,which is that of a woman of the same age, it is much more difficult to elicit any hallucinations, although it is stated that she turns around and answers someone as if present, when she is alone. Her memory is somewhat impaired and she does not express herself as well as she used to do. There is also considerable diminution in the accuracy in the work which she does. Her case is very similar to the one which I have just described, but she has not only the signs of vascular senescence, but also an old mitral lesion interfering with the nutrition of the brain.

It is well in these cases to go as far as possible into the sympathy of the patient and to be careful in asking questions in such a way that they will volunteer statements. If they are gone at harshly or unpleasantly they will directly shut up in their shells and the physician will be unable to get the data which he wishes. If approached pleasantly they will frequently volunteer information which may be most necessary for a diagnosis.

The next case is that of a boy fifteen years of age, who received a blow on the head with a baseball bat some years ago. As a result of this accident he shows a marked depression in the frontal bone. About six months ago he had a convulsion, since which time he seems to have made a good recovery, but he has lately developed epileptiform seizures beginning in the right arm. When he undertook to put on his cap he noticed that the hand began to shake, and he loses his senses for about a minute. This boy has an attack of monospasm or the convulsions of one limb, and for a time his consciousness is lost. There are other parts of the body affected, but they do not seem to be so marked in degree as in the case of the arm. Such a case suggests at once the idea of an operation. We will be able to follow the chronology of the case and trephine the point of accident. Possibly it would be better to make a large combination flap and expose a large area of the brain in order to see if the epilepsy is due to this fracture of the skull received some years ago. It is probable that the boy has a chronic pachymeningitis which is traveling backward and downward and which requires surgical treatment.

The following case is an instructive one in this connection. It is that of a boy aged eight years, whose father and mother are perfectly well and whose family history is negative. This is rather unusual in cases of nervous disturbance in children, for it is usual to find something of the same kind in other members of the family. There is only one other child in this family and it is in good health. The boy who while sturdy at present, was born in a weakened condition. He did not learn to walk as soon as other children, and when he did learn he did not walk right, but it was feeble in character as if he was afraid he would fall. When we get the history that a child has not learned to walk early nor has not learned to walk right, it is well to look for the symptoms of arrested development in some part of the system. This boy took his food readily as the other child did, and we find that the difficulty was restricted to walking and that none of the general functions seemed to be interfered with, nor did there seem to be any signs of cerebral arrest. It was found that he stumbled and fell when he attempted to walk and this difficulty gradually grew worse. He never was active on his feet, and he walked at his best about a year ago. In the line of children's diseases he has only had scarlet fever. On examining his walk it can be noticed that he increases the base of his support. He extends his right leg out and there is atrophy of this leg and of his right shoulder. There is defect in the muscles as regards their size, for the calves of his right leg and the muscles of his left arm are larger than they should be. On the back his waist line is lower than it should be in a child eight years of age, and now we find that these children present a peculiar symptom when asked to rise from a sitting position. As this boy gets up he does so on all fours first, then he climbs upon his legs, then upon his haunches and finally secures the erect position. His legs are large and weak and the muscles of his back are weak. There are no signs of sensory disturbance in the child.

There are found no symptoms which point to peripheral nerve degenerations, nor are there any evidences of central nervous involvement. It is a peculiar fact that the muscles which are large are larger than they should be, while the muscles that are atrophied show nothing special as to feeling. On examination electrically we find the usual responses. When we examine muscles like these large muscles we find that they have actually undergone atrophy from disuse. By means of a small retractor we can bring into use a small fragment of muscle. We find that there is not as much muscular fiber as there should be, while we find that the number of tissue nuclei is greatly increased. Undoubtedly these muscles have undergone fiber degeneration and we see a tendency to hypertrophy. This case is quite a typical example. The difficulties in the locomotion of this child are probably due to disease in the brain centres, to disease in the spinal cord, or to disease in the peripheral nerves. Difficulty in locomotion may also occur from disease of the muscles coming under the general term of myopathy. This seems to be a typical case of this kind, for there appears to be here a disease of the muscles independent of the mind. It has its origin primarily in the muscle, beginning in the muscle and remaining there. The manner in which he raises himself from the floor first on all fours, then on his knees and elbows, then on his feet and hands, and then suddenly rising is typical of myopathy.

The next case is that of a young woman 20 years of age, who has for some time noticed a curious sensation in one of her hands, noticing this trouble first about six months ago. It seemed to have the feeling of the pricking of a needle in her right hand. In August, while on her vacation, she fell down, her knees having given away. At this time she noticed trouble elsewhere. There was tingling sensation in her left hand now as well as in the right. Her legs grew weaker and when she returned to ordinary housework she found she could not handle things as she had been accustomed to doing. There is no wrist drop present, but she holds her hands as to suggest it, and there is some tendency to wasting in her arms. It is, however, in regard to her legs that we have noticed marked peculiarities. In walking she exhibits a foot drop which is very apparent, having the steppage gait, more marked upon one side, although it is present on both. It is not the gait of an ataxic, for she does not walk as an ataxic does. She can raise her foot off the ground and she does not

stagger. It is undoubtedly a case of multiple neuritis affecting the peripheral nerve trunks, not due to a toxic cause, as in a case of alcoholic multiple neuritis. We have here an affection of the peripheral nerve trunks which comes on very insidiously without the history of any previous disease but undoubtedly has one, following such conditions as influenza. There appears some disturbance of sensation, a sharp pain now and then, which, however, is never very marked and never very persistent. and which does not in fact attract the attention of the patient to any degree. This is a disease of the nerve trunks, a primary neural paralysis. Later trophic changes make their appearance. It is noticed now that she is equally unable to extend her foot. She flexes it on the contrary. The peripheral portion of the nerve trunks are undergoing degeneration. There is gradual involvement of the axis cylinder and nerve degeneration is increasing. In her case the motor fibers suffer more than the sensory fibers and therefore sensation is not interfered with to any great extent. There is noticeable in this case an atrophy of the muscles of the calves of the leg, more marked on one side than on the other. The way in which she uses her hands shows that there is a waste going on there. These cases are generally more marked on the one side than upon the other. In the few autopsies which have been held in these cases the changes have been found in the nerve trunks, but no changes in the spinal cord.

In treatment a great deal can be accomplished by forcibly simulating the nutrition of the patient, by feeding the patient liberally, by giving her massage, by giving her bathing, by giving her electricity, in fact, by doing everything that will keep her muscles alive and retarding the atrophy. Sooner or later, however, it will be necessary to supply some apparatus which will enable the patient to walk better, something must be done to hold her foot up. It must be kept in such a position that it will not drag. A muscle which has its work lessened degenerates less rapidly. You can do more for such a muscle by rest than by work. I remember this some years ago in a case of palsy of the deltoid muscle in which that muscle had been rubbed religiously for weeks with no good result. The arm was bandaged, the deltoid muscle raised, electricity was tried, and the muscle began to gain, to recover, undoubtedly due to a large extent to the rest which it was given. These cases were formerly regarded as cases of spinal atrophy, but now we know that they are diseases of the peripheral nerves and not of the cord.

Another case of paralysis in the nerve trunks was seen in that of a child. This child has its two feet hanging somewhat differently as it lays upon its mother's lap. The left foot is flexed while the left hand is helpless. The right foot is cold. There is a complete palsy. The baby is fifteen months old and was weak at the time he began to walk, which was when he was a year old. He fell down, cried considerably, had fever, and remained in this condition for three days. He was never the same child again. This condition remained the same for three weeks, after which he gained strength in one leg, while the other did not recover at all. I do not think there was any significance between the fall and the disease. Undoubtedly the child fell because it was beginning to be sick, not that the fall made the sickness. With this, fever appeared to a large extent suggesting some infectious process. This is undoubtedly a case of poliomyelitis occurring in a child with a local expression of the trouble in the tibialis anticus muscle. The child still preserves some knee jerk and it is rare to find this phenomena totally lost in these cases.

In considering the treatment of a case of this sort it is well to view the condition of the local palsy as resulting from a lesion in the gray matter of the cord. Electricity is indicated in that form which gives the most response with the least pain, and in addition massage should be given. The nutrition of the child should be built up and kept in a first-class condition. It is well to put the tibialis anticus muscle at rest. This can be done by putting on an apparatus which prevents the overstretching of this muscle. He now should be enabled to support the foot in a proper position, and the case should be carefully watched for a long period of time.

TENDENCIES IN THE GROWTH OF SARCOMA AND CARCINOMA.

BY A. N. ULRICH, M.D.

AS pointed out some years ago by Longstreth, Gross has contributed probably more information to the surgical treatment of sarcoma of the mammary gland than any other authority. His records are especially reliable because frequently the progress of the patients has been followed to the final result, often into periods long subsequent to that given in the published account. He found that the spindle-celled variety, including fibrous, occurred in 68 per cent., the round-celled in 27 per cent., and the giant-celled 5 per cent. The subvarieties were made by various transformation combinations with other neoplastic tissues, such as ducts or retention cysts, and by the persistence of glandular elements. These subvarieties are fibrous, lymphoid, alveolar, myxomatous, cartilaginous, osteoid, calcifying, melanotic, telangiectic, hemorrhagic, cystoid, and adenoid. Of these 50 per cent. are cystic, either barren or proliferous; 33 per cent. are adenoid, principally in the spindle variety; 12.80 per cent. are myxomatous, 7 per cent. show the vascular influences; 7 per cent. are cystoid, thus giving an increased preponderance toward the cyst formation.

Gross wrote thus: Of the five specimens of adenoid spindle-celled growths which I have extirpated, all were lobulated, firm, elastic, adherent to the gland, grayish-white in color, and rough on section. The fibromata, on the other hand, were hard, merely nodular, less adherent to the mamma, white, more compact, and tough on section. Under the microscope, the glandular elements were undergoing obliteration to a greater extent in the former than in the latter. Inflammation and suppuration are infrequent. Ulceration is common, though not so markedly as in carcinoma, but double that of fibroma. These ulcers possess striking, almost characteristic features. They come more through gangrene or rupture of the attenuated skin rather than from infilteration of sarcomatous cells, and the area soon shows a fungation, not the craterlike excavation of carcinoma. These tumors are generally solitary (only ten multiple instances among the 156), generally seated in the vicinity of the nipple, and when in the circumference, usually in the upper and outer part of the gland; cystic, when of natural origin, solid in the outlying lobules. The growth soon extends beyond its capsule, invading the entire gland and the surroundings, giving rise to broad-based hemispherical masses, but now and then pedunculated. In respect to the age, only 4 came before 16 or the developmental year, while 77 after 40, or during the functional decline—leaving 67 cases out of 148 between the 16th and 40th years. Spindle-celled tumors come earlier in life. Fourteen out of 15 sarcomata occurring before the age of 20 were

spindle-celled. Unlike cystic and solid fibromata, cystic sarcomata appear earlier than the solid. Hence it may be said that spindle and cystic sarcomata are metaplasias of the functionally perfect mamma, and round-celled, giant-celled, and solid are metaplasias of the declining gland. These facts show that the etiology is most obscure, since their development is rarely traceable to injury or disease, and is not influenced by hereditary predisposition, while social state and menstural irregularities or arrest are surely unimportant agents in their production.

"Their increase is more rapid, of course, than other connective tissue neoplasms, but shows great diversity, independently of age, influenced by their structure, by their degenerations, and by cyst formation. Solid sarcomata are sometimes large, but it is myxomatous degeneration and softening cysts which make the enormous dimensions. Cystic growths often remain small, then starting up to attain larger sizes, but showing very unequal rates of progress, while long periods of quiescence and intermission are not infrequent. Continuous growth rather indicates freedom from cysts and vegetations, while sudden and rapid increase points to fluid accumulation and intercanalicular vegetation." Menstruation, pregnancy, or lactation conditions naturally expected to render the gland more vascular—seem to have no such influence as has been assumed by certain authors, and the effect is not confirmed by an analysis of these cases. "The active growth is liable to be attended with marked elevation of temperature. These tumors are highly vascular and composed of small cells, so that elevation of temperature may be said to be characteristic of telangiectatic and rapidly proliferating growths. Further investigations in this direction may prove useful in determining the differential diagnosis of connective tissue neoplasms, and should not be neglected." During their growth they continue, as a rule, mobile and free from superficial or deep attachments; the skin natural in color and texture; the veins not enlarged; the nipple normal; the associated lymphatics uncontaminated. Recurrent tumors not uncommonly become fixed to the muscle and the chest wall, while the primary growths leave these parts as well as the integument free. The skin may become adherent, but the microscope does not show that it is infiltrated. Although the skin is not infiltrated, it changes color in some instances. The veins were enlarged in 24 cases, and the nipple 5 times; in 19 cases the lymphatics were enlarged or tender, but in only three instances were the tumor elements detected in them (one a primary alveolar, pigmented, round-celled, the others recurrent growths, one from a round-celled, the second from an alveolar giant-celled tumor); the immunity of the glands is remarkable, and the figures show that it is the result of an irritative hyperplasia. Pain attended about one-third of these cases, absolute tenderness in very few, but annoyance from weight and bulk was very frequent. Sarcomata often grow through their capsules and invade the surrounding tissues in mass, but even while the capsule remains intact a small-celled proliferation takes place along the course of the blood-vessels, forming "the latent zones of infection," which are not readily appreciable to the eye, but serve as points of departure of the recurrences and the foci of general infection. "Hence it is that the prognosis of sarcomata is eminently unfavorable, although there is still no little diversity of opinion among practical surgeons and pathologists on this point." The malignant attributes of sarcomata, "as denoted by their capability of producing themselves, not only in the neighboring tissues, but also in remote parts," Gross established for all varieties of sarcoma. Among the 91 of the 156 cases, in which the history was followed, 32 remained well for periods of considerable length, 42 exhibited local recurrence, and the remainder showed metastases. "In other words 64.83 per cent. of these cases were endowed with malignant features." The histological constitution of the growth exerts a marked influence upon the date of recurrence, and the prognosis is materially influenced by the age of the patient and by the size and rate of increase of the tumor. "It does not appear, however, as many writers assert, that the more tender the age the more rapid the growth of, and the more malignant the neoplasm. After 35, the danger increases with advancing age. In other words, a sarcoma occurring in a functionally active breast evinces a marked disposition to recur after the operation, with less disposition to metastasis, while a sarcoma of the declining breast recurs less frequently, but is generalized in a greater number of instances." While the round-celled are the most malignant, the metastasis of the spindle-celled is not to be denied, nor can we say that the cystic variety is an innocent tumor, or one of the limited malignancy, since it recurs in more than one-half of all the cases, and generalizes itself in about one case out of every nine."

Gross' table of comparison of many important features of sarcoma and carcinoma is most interesting:

	Sarcoma.	Carcinoma.
Invasion of skin by tumor elements	9.67 per cent.	68.92 per cent.
Invasion of chest walls	3.87 per cent.	21.58 per cent.
Primary invasion of axillary glands	0.64 per cent.	67.35 per cent.
Local reproduction after removal	58.24 per cent.	80.97 per cent.
Metastases found post-mortem	60.00 per cent.	50.00 per cent.
Average duration of life	81 months.	39 months.
Permanent cures	13.18 per cent.	10.39 per cent.

Some years ago in a report by the Collective Investigation Committee of the St. Bartholomew's Hospital, London, concerning cancer of the breast, it was determined that of 365 women who had borne children there was antecedent mastitis in 71. In the inquiry, out of 174 returns 27 showed mastitis. No report of the resulting condition of the breast after the inflammation is made. Only four cases had suffered mastitis shortly before the tumor developed, and the others from 4 to 40 years had elapsed; in 10 of these instances more than 10 years—between the suppuration and the tumor. So "that as the proportion of cases in which the occurrence of mastitis is chronicled is small, it can scarcely be considered to play an important part in cancer production. frequently recurring, like the attacks of superficial glossitis; or continuous, like the so-called eczematous conditions of the nipples; and the effects of past inflammation, such as scars and warts, if they become the seat of cancer, are almost always so situated that they are subject to injury or irritation, and thus degenerate into cancer.

Taking up the question of inheritance, in 210 cases there was no family history of cancer in 116; while in 68 other members of the patient's family showed cancerous affections, making a proportion of 1 to 2.7, while Paget's figures were 1 out of 3 in his private cases. A family history of cancer does not necessarily imply a history of inheritance of the disease, and the commission tried to find the chief evidence for the theory of inheritance in (1) the occurrence of a few cases of cancer in many families, and (2) in the occurrence of many cases of cancer in a few families. Under the first head it was found that 68 patients had 99 cancerous relatives, 44 having only 1 cancerous relative, and the rest 2 to 4. The disease in the cancerous relatives affected the breast in 34 cases. Taking up the "line of descent," from which alone inheritance can be predicted, and this

consideration at once reduces the 68 family histories to 38 in which a true inheritance is found, the proportion changes from 1 :2.70 to 1 :4.84. Many circumstances and conditions are adverted to which, on the one hand, may be looked to to augment these figures, and others which would detract from them. Of evidence under the second head, none has been offered. In two reports four of the patient's relatives were cancerous, and this is the largest number. In a family of 7 children, 6 died of cancer, the men of cancer of the digestive organs, the women of cancer of the breast. Such evidences, which, if attainable, would be more conclusive than any other, is perhaps not to be expected. A family with such a curse, or so susceptible to the disease, must rapidly disappear. A comparison of the evidence of the influence of inheritance with that of other causes, exciting or predisposing, shows a balance favoring inheritance. The predisposition of the breast and uterus to cancer is certain, yet not more than 1 in 50 (per cent. of adult women die of cancer of these organs. Gross shows only 11.7 per cent. attributed the disease to injury. This commission shows 20.6 per cent. in the direct line of descent, 17 per cent. from parents. Diet seems to have no influence on the occurrence of cancer, and the returns of this commission furnish no definite data. "The history of the diet of these persons all goes to show that they were moderate in food generally, and particularly moderate in partaking of animal food and stimulants. But neither a very small allowance of meat nor total abstinence from stimulants sufficed to protect them from the disease. The question of locality is in many respects the most difficult to trace by the method of collective investigation." To be reliable, it must be complete and thorough, and this inquiry not being compulsory, was necessarily imperfect. Although the returns show that 136 cases were dwellers in towns and 70 from the country, from many circumstances it is probable that this statement does not present the true disproportion in the numbers. Again, the dwellers in valleys and those on hills are about equal. But this statement is misleading, since the hill may be at a low elevation compared to the valley on the hills and mountains. In the returns there is but a single instance of cancer in a resident more than 1,000 feet above the sea.

Cristiani demonstrated that muscular fibers show different modes of involvement, degeneration and disappearance, according to the character of the primary growth by which they are affected. This divergence corresponds closely to the mode of growth of the respective tumors. In mammary carcinoma there are often found cancerous nodules in the midst of the muscle which traverse its length and intersect its fibers, pushing them aside, but this is not a true cancerous degeneration. Again, it may be seen on sections perpendicular to the length of the muscle, that the general arrangement of the cancerous alveoli closely resembles the normal muscular tissue. The site of the muscular disks, as seen on cross-section, are occupied by epithelioid cells, and the whole presents the aspect of an acinous gland, having for its framework the muscular fiber; the connective tissue in the invaded part growing firmer in consequence. In the intermediate zone between the cancerous tumor and the normal muscular fiber there are to be seen in the interfibrillar spaces very small cells—some large size, with large nuceli not very numerous, others generally small in size and much more abundant; the former are epithelial, the latter embryonal in character. Some muscular fibers seem normal, while others are seen to contain one or more large epithelial cells. Some of the fibers are completely filled, and the contractile substance diminishes as the cells increase in size.

The cells which are found within the fibers clearly have entered it from outside. Not frequently these cells are seen pressing up against the sarcolemma and partly through it, and at these parts the muscular nuclei show little or no reactive process. Cristiani concludes that in carcinomata the muscular fibers sometimes simply atrophy, with or without a preliminary nuclear proliferation. In other instances the epithelial cells penetrate into the muscular fiber and destroy it entirely.

The curability of cancer by operation was discussed very ably some years ago by Shrady, who relied on the non-constitutional origin of the disease and the early removal of the local growth. Dissemination is only secondary. The array of facts which he brings forward in favor of local origin, together with the invariable exceptions to the rule, would seem to be interpreted more fairly by the conclusion that the malady is sometimes constitutional or general, and at others local or accidental. This two-fold interpretation of the data enables us to account for many features otherwise unexplainable. Blows or other irritations are not invariably followed by cancerous developments, and the extirpation of the local tumor in many cases removes the condition.

It is possible that a malady, which in one instance is and in another instance is not preceded by altered tissue conditions, should be caused by a blow in one patient and should not follow an identical blow in another patient. On the same supposition, it is conceivable that extirpation succeeds in one case and not in another, even when the operation is carried out at the same stage of development and with the same thoroughness. This double supposition will not harmonize well with the theories of inherited influences, either of the constitutional or general sort, or those inherited tendencies of a locality. To make harmony it seems necessary to discard almost entirely the notion of inheritance. Shrady speaks of the very limited influence of this factor in the causation of the disease, since it is the "exception for more than one member of the family to become the victim of cancer." The tendency to recur can be based as much on the local as the constitutional theory. But that "the cachexia is evidently caused by the involvement of one or more vital organs" is not so evident. Would not most observers prefer to attribute cachexia to blood changes and failing nutrition in cancerous affections as well as in other maladies? The author's statistics seem to prove the advisability of operation, to show its beneficial influence and its power to cure in a large number of cases. The following conclusions are offered by him: (1) Cancer is essentially a local disease, and can be cured by operation in spite of recurrence. (2) Operation, when it does not cure, prolongs life and diminishes the total amount of suffering. (3) Operations should be repeated as often as there is any chance of entirely removing recurrent growths. (4) The earlier and more thoroughly the operation is performed the better. (5) The disease, when it recurs, is generally of a milder type than the original growth, less painful and less exhausting. (6) Antiseptic surgery makes more radical operations possible, with better ultimate results, than formerly obtained.

Contra-indications to operations in these tumors are brought up by many observers; there are many who believe that all surgical intervention is harmful; others, that it is useful; and still others who think that operation at times hastens the recurrence. Every one agrees that in generalized cancer no expectation of cure is to be held, but even in these cases palliative operations are

often forced upon the surgeon. Many think it is not proper to attempt operation when the growth has invaded the pectoral muscle, when adhesions to the walls of the thorax have taken place, when the skin is invaded as well as the axillary glands. Remember the distinction between the actual invasion of the skin and the mere adherence of it to the tumor; the former causes the appearance known as orange skin, and the latter produces redness, depression, and finally ulceration. Another contra-indication to operation is the condition named by Velpeau pustulous cancer, where numerous shot-like bodies are left in the skin: This condition is rapidly followed by recurrence after operation.

PHASES OF KIDNEY TROUBLE.

BY A. M. LEONARD, M.D.

LONG has published a case in whose urine he found albumin when taken at times of activity but when taken after a night's rest was free from albumin. She became pregnant and it was then noticed that gradually the albumin diminished and disappeared, to reappear after child-birth. He explains this phenomenon by ascribing it to the increase in vascular pressure and tonicity arising during pregnancy.

In intermittent albuminuria, many authorities believe that this condition is due to a question of warmth rather than to diet, excretion or exertion. The posture in bed with accompanying warmth brings a cessation of albumin secretion, which returns when the patient is chilled. The practical indication from this observation is to place this class of patients in bed, especially if any kidney change can be detected. Conversely it is well not to place too much reliance on the absence of albumin in patients, in bed recovering from acute kidney trouble as afterwards the urine may become albuminous when the patient gets out and around.

The pelvis is by far the seat of preference for calculi; as the walls are either thinned or are thick and fibrous, the external layers being loaded with fat. Calculous formation often invades the calices, the whole or part of the calculus occupying a calix, becoming distended and the walls growing fibrous. As a result the renal parenchyma may be entirely altered and absorbed; or may be the seat of a hypertrophy, atrophy, of a parenchymatous of interstitial inflammation, or of cystic change. The calculi themselves may become very heavy specimens, such as those from Pope Innocent XI., where that from the right kidney weighed 180 grammes; while that from the left, 270 grammes. Greater instances are known, for example one case is reported where the largest weighed 1,015 grammes, and was accompanied by smaller ones weighing about 60 grammes; in the opposite kidney was a, calculus which weighed 273 grammes. The shape and size as relating to the position occupied by the stones may serve as a basis for classification as follows: "The largest (a) those occupying renal parenchyma, calices, pelvic, and ureteral opening; (b) those occupying the calices, pelvis, and ureter; (c) those filling the pelvis and beginning of the ureter; (d) those completely filling calices and pelvis; (e) those filling the calices and that part of the pelvis toward the calices; (f) those occupying the ureter and pelvis, the part toward the ureter; (g) the small ones scattered in the pelvis; (h) the calices, and (i) the parenchyma."

Calculous anuria has been studied by various writers; in 56 cases which were not operated on, 16 went on to recovery, while the other 40 died, principally within a week. Of the fatal 40 10 were not examined after death; of the others, 23 presented recent obliteration of one ureter and 7 showed one or more calculi in the pelvis capable of completely blocking the opening of the ureter. On the opposite side 3 kidneys were congenitally absent, 6 showed atrophy or some other change due to calculi, 14 various calculous lesions, 6 obliteration of the ureter, and 1 healthy kidney. From these cases it is possible to claim that anuria is not necessarily due to obliteration of the ureter, but that it may come from unfixed calculi in the pelvis of the kidney without these causing absolute closure of the ureter. Generally the opposite kidney is affected, although in spite of the condition it is, in a certain prooprtion of cases, capable of carrying on the function. Comparing the results of non-interference (a mortality of 71.5 per cent.) with those of surgical interference (11 cures out of 16 cases—66.6 per cent.), the value of surgical treatment is at once apparent; in the operation the position of the calculus must determine the details and the exact character of the procedure. Lumbar incision is generally the best, but the final decision of method must consider the question of ureterotomy simply, and the creation of a urinary fistula in the lumbar region.

The significance of albumin in urine ever troubles the profession. Porter, for example, states that except that which occurs early in acute exudative nephritis is a derived albumin and not serum-albumin; (2) in the early stages of the acute exudative or diffuse nephritis the albumin comes directly from the blood-vessels, due to the inflammatory alteration in their walls, and is of the type of serum albumin; (3) that later in the course of the same form of nephritis, when the vascular walls have partially recovered from their primary inflammatory damage, the albumin becomes more abundant in quantity, but is now of the derived-albumin type, and has been excreted by the damaged epithelial cells lining the uriniferous tubules; (4) that in all conditions, except the acute exudative or diffuse nephritis, when albumin is found in the urine it is due to changes in the epithelium, by which the latter is rendered unable to perform its work properly and excretes or allows a derived form of albumin to pass through into the urine; (5) that this retrograde change in the epithelial cells is secondary to an impaired nutritive condition at large, together with an overworked state of the renal cells, without a compensatory nutrition being maintained; (6) that the quantity of albumin in the urine is always in direct proportion to the amount of retrograde change in the tubular epithelium; (7) views in this light, treatment of the condition should be directed to improving the general condition of the system, and at the same time to diminishing the amount of work to be accomplished by the kidneys." A certain amount of albumin remains in the urine, in spite of all efforts to bring about its total disappearance, and yet the patient as far as can be determined is in good health.

With an ordinary albuminuria, with clear urine and absence of pus and blood, it might be referred to one of the following points of origin: from a physiological disposition toward the condition, recent traumatism of the lumbar region, tubular or glomerular desquamation due to some recent infection, as scarlatina, chronic nephritis in its early or later stages, or a calculous condition of the kidneys. The albuminuria from the existence of renal gravel is usually a transient one due to one of these factors: the presence in the kidney of agglomerated sand or of larger, isolated concretions attached to the mucous surface of the tubules, the movement or the disturbance starting up the motion of these concretions, or the arrest of the moving concretions, obstruction of urine, and renal colic. It may

thus be a symptom of renal lithiasis in its earlier stages, when it is of an irritative origin; or it occurs in the later and more advanced stages, along with albuminuria arising from pyelonephritis and other obstructive causes. It is due to alterations in the character of the blood in the first place, to alterations in the pressure and flow of the renal circulation, and to lesions of the renal epithelium. For example, the arrest of a concretion at some point it is apt to lead to an obstruction of the flow of urine, and thus cyst is produced which presses upon the adjacent blood-vessels, and causes a passive congestion which, with the alteration of the tubular epithelium apt to co-exist, is probably sufficient to determine the symptom. The albuminuria is simply a protest on the part of the kidney against the presence of the calculous concretions, which act as foreign bodies. Out of 150 cases of cystitis or orchitis, an albuminuria was found in 12 per cent.; often unsuspected in these cases, it may vary very much in its intensity as well as in its uniformity.

It is well accepted nowadays that albuminuria is not necessarily a symptom of unquestionable prognostic and diagnostic value. Cases of Bright's disease have been reported in which this condition did not appear or appeared only occasionally, and in very small proportions. The intensity and character of the albuminuria are sometimes without value to indicate the degree of pathological change in the kidneys. To estimate the danger of the various auto-intoxications threatening in Bright's disease, many authorities prefer to determine the toxicity of the urine. This is to be done by injecting into the venous circulation of animals clear carefully-filtered urine until a fatal result is produced upon the animal used for the experiment. The rabbit is the best for this purpose. The intensity of the poison is estimated in reference to the toxic power of normal urine, Bouchard having found that for every kilogramme of body weight of the animal experimented upon, 50 cubic centimeters (1¾ ounces) of normal urine are required to produce lethal toxication. Where the toxic power of the urine is increased, it indicates a free excretion of the poisonous principles developed within the diseased body; where the renal function is relatively torpid, the toxic power of the urine is diminished.

Krogius in 1890 differentiated a bacillus in purulent urine, which he described under the name of *urobacillus liquefaciens septicus;* this was compared by Schnitzler to one which he had found under similar conditions, regarding it as identical. This bacillus is a short rod, with rounded ends, stains fairly well with Gram's stain, and does not show aportulation. Injected under the skin, it is followed by abscess formation, in this particular especially differing from the micro-organism as described by Krogius. Injected into the bladder, it is invariably followed by the establishment of an intense, purulent cystitis, even in cases which have resisted the action of the *staphylococcus pyogenes aureus.*

The infection is explained as follows: A patient may have a dental abscess, a purulent bronchitis, or, perhaps, a subpreputial suppuration, and is suddenly seized with vesical tenesmus, pollakiuria, terminal hemorrhage, pyuria. Such a course of events may be due to the passage through the kidneys into the bladder of masses of micro-organisms from the primary purulent focus. Cystitis by many European writers is considered a micro-organismal affection, due to several forms of disease germs, but to the staphylococci of suppuration in its most acute and supurative form. Besides the acute suppurative variety, tubercular cystitis also is apt to be accompanied by more or less purulent change. In the simple catarrhal form the author refers the origin to certain anaerobic bacteria without pyogenic power; these alter the urine, causing it to become alkaline. The introduction of bacteria into the bladder may occur, according to the author, by the urethra, by means of a catheter, or where a permanent opening exists, as in cases of bad stricture, through perforation of an abscess into the bladder, from the kidney, or from the blood. Considering cystitis in children, Baumel, after mentioning such causes as gonorrhea, phimosis, cold and prostatic lesions, gout, stone, mentions a case in which he found, after eliminating these causes, that the patient's father was epileptic and alcoholic, and had accustomed his child from an early age to drink pure wine. The employment of rhus aromatica and hydrastis Canadensis is also suggested. Some such prescription as this is excellent:

℞ Rhus aromatica.. .. ..ʒij
Nux Vomica.. .. ..gtt.xvi
Acid phosphate of calcium.. .. ..ʒj
Orange-syrup.. .. ..ʒj
M. Sig.: One fluidrachm every three hours.

When it comes to the treatment of cystitis in women, salol is recommended by many as one of the most efficient means of antisepsis; borate of sodium is efficient, although apt to create gastric disturbance; while boracic acid in saturated solution may prove enough. Salol, in ½-drachm doses, daily, for several days, before any operative procedure is always excellent; intra-vesical douches of boracic-acid water (3 to 100), with the disinfection of any instruments used, of course. The medical side of the treatment includes injections of morphia; barley-water, linseed tea, and other diluent diuretics aid in calming the pains in micturition by freeing the urine from its irritating properties. Rest and opium, chloral, bromide of potassium, and belladonna relieve the pain, and purgatives and enemata are valuable for the treatment of the constipation. The medico-surgical indications are, for the most part, devoted to the injection of various remedies, for their local action—calmative, astringent, or antiseptic. Cocaine with some takes the principal position; while morphia and the other opiates are also used. Among those agencies which are supposed to exercise a direct influence upon the inflamed membrane, boric acid, permanganate of potash, Labarraque's solution, sulphate of quinine, and nitrate of silver are all mentioned; as, too, the balsams, iodoform, and other remedies. Dilatation of the neck of the bladder and the establishment of a vesico-vaginal fistula—have been done in obstinate, unyielding cases.

The question of the relationship of insanity to Bright's disease is shown by the disorders of sleep with motor and sensory disturbances occurring with greater or less frequency in the early forms of the chronic disease. Whether there is underneath a uremia producing these symptoms, it may be allowed at least from their first manifestations, that they are probably the results of auto-toxication, induced from renal insufficiency. At the outset the relations between these symptoms and the renal affection is not necessarily apparent, but as the disease advances dependence becomes clearer. Raymond records the case of a patient who suffered from insanity and chronic nephritis. In the course of several years he observed that, whenever the renal disease was exacerbated, the patient's mental condition also became worse. Another case, a lady, in whom the autopsy showed interstitial nephritis, passed the last weeks of her life in a state of acute delusional insanity.. A case mentioned by Brissaud and Lorring was quite similar to this last one, except that the case

became cataleptic and manifested bulbar phenomena a short while before death. Joffroy, while on this subject of insanity of Bright's disease, distinguishes those cases where insanity exists along with, but independently of, the renal condition, not being influenced either in its inception or in its manifestations by the nephritis, and those cases which are called into being by the toxication from the renal inadequacy, or those which, existing perhaps latently as a hereditary predisposition, are intensified by the influence of the disease of the kidneys so as to become manifest.

Examine this class of cases in their mental condition, which gives a fair estimate of the amount of renal failure. The mental symptoms arising in uremia extend from a simple mania to well marked insanity. It would seem occasionally that the uremic poison alone suffices to produce these psychic disturbances. Frequently, however, the delirium or insanity occurs because, either from an insane predisposition or from a state general neurotic predisposition, the brain is found in a of diminished resistive power. The personal and family history contain much data if light can be thrown on it, for one or the other of these predispositions is a matter of great importance.

A set of respiratory symptoms often marks the early stages of Bright's disease, advancing with the advance of the case, finally becoming very prominent and pronounced uremia. The dyspnea of advanced Bright's disease is undoubtedly often of toxemic origin. But, apart from the direct action of the toxic substances upon the respiratory centers or upon the respiratory tissues, we must take into account the circulatory element. Steell, a good authority, is disposed to regard the cardiac factor in these cases too much and to allow too little influence to the toxemia, calling attention to the many similar features between the dyspnea of Bright's disease and that from accepted cardiac origin,—the breathlessness on even slight exertion, the distressing paroxysms at night, the influence of the horizontal position to increase the severity, and the fact that Cheyne-Stokes respiration is not infrequent in both conditions. The value of the nitrites and of alcohol, perhaps, too, of small doses of morphia,—by diminishing the vascular spasm, may, in this gentleman's opinion, be thus explained. The deleterious effect of morphia upon the renal function he acknowledges in these cases, yet in small, careful doses, it is one of the most valuable means in quieting this dyspnea; if the dyspnea were toxemic, he claims, this action would be inexplicable, poison being merely piled upon poison. Further, there are present, in these cases, other evidences of circulatory disturbances: congestion of the lungs, edema, enlarged and tender liver, lividity of the lips, and marked tension of the pulse.

This authority does not believe in the existence of a pulse of low tension, even in failing circulation, for the sphygmographic tracings show a fairly developed wave even to the end as a rule. Such circulatory dyspnea may appear with a urine departing considerably from the type of urine generally described as typical of chronic nephritis. Generally it is concentrated, deep-amber colored, and may deposit urates and contain a marked proportion of albumin; but not infrequently the urine may be found light in color, free from deposit of urates, and containing the faintest amount of albumin. Landouzy emphasizes the fact that in many instances there is too great a tendency to regard as cardiac a toxemic dyspnea, and suggests that in such cases of dyspnea, where no auscultatory symptoms are present, even if the urinary phenomena are not very strong, the possibility of uremic origin.

The dropsies of advanced renal disease may show an irregularity of location, although, as a rule, they are first seen about the face, hands and feet. Mendel reports a case of a man 50 years old in whom this symptom had occurred in various positions. Once he was rather suddenly seized with severe attack of dyspnea, due to an edema of the pharyngeal walls and the upper part of the larynx. In the course of several days, under the use of spray of carbolic acid and an absolute milk diet, the edema disappeared. Then the edema appeared elsewhere, in scrotum, feet, hands and face. Tschirkow calls attention to a form of edema to be excluded from the symptoms of Bright's disease. It is a superficial edema in patients showing no traces of albuminuria, and without alterations in heart or lungs. In none of the cases he has met has he been able to establish any relation with the haemic condition, as in chlorosis. But the fact of the co-existence of specific history in one case, an indefinite history of multiple peripheral neuritis in a second, although the history of the other two cases in his series was entirely negative as to lues, led to the administration of iodide of potassium. The rapid disappearance of the edema from all four cases makes the writer look upon the phenomenon as due to some syphilitic affection of the vasomotor system. Musser has studied the high arterial tension in cases of chronic Bright's disease, referring to the renal inadequacy and retained substances as an important factor in its etiology.

Epistaxis in Bright's disease may be due to a sanguine dyscrasia, to alterations of the vessels supplying the nasal mucous membrane, to cardiac hypertrophy, and to increased arterial tension, seen most frequently in the interstitial form of Bright's disease, appearing principally at the beginning and at the end of the disease. Possibly it may be the first sign to excite a suspicion of the affection, and is thus of considerable diagnostic import. The loss of blood and the grave conditions which it often forebodes, makes the prognosis always serious. So it is with the cerebral hemorrhages of advanced Bright's disease. Suckling reports a case where the patient presented a train of symptoms quite common to the course of chronic interstitial form of the disease, with marks of a slight, old, retinal hemorrhage. "There occurred improvement of the severer symptoms during the period of treatment, but one night the patient became quickly sleepless and delerious, and was found the following morning in a comatose condition. His temperature was slightly subnormal; there were no convulsions; the bladder was not distended; pulse 80, small, compressible; pupils equal, a little dilated, reacting to light; no strabismus; no paralysis. Croton-oil was given, and hypodermatics of pilocarpine; but the coma deepened, the breathing became stertorous, the chest filling with rales, and the pulse and respiration failed almost synchronously. At post-mortem examination the kidneys were found in an advanced condition of disease, and the other organs were correspondingly altered. In the brain, to the left of the aqueduct of Sylvius, there was a small hemorrhage, of the size of a pea, flattened from above downward in its site in the pontine part of the floor of the fourth ventricle. The question of a failure to recognize the hemorrhage previously existing is considered as quite improbable, imposition of hemorrhage being possible without well-marked symptoms being developed, especially in an unconscious person, the pressure being probably upon sensory cells and upon some

of the fibers of the fifth nerve. The character of the clots was such as to lead the physicians at the autopsy to believe that it had not existed for any length of time; and the case is summed up as one in which a hemorrhage occurred, without producing recognizable symptoms, followed by coma and death, probably due to uremia."

To examine carefully the failure of the kidneys to remove effete material as it affects the gastro-intestinal tract, Kravkoff has studied the stomach in 26 cases of chronic parenchymatous and interstitial nephritis, principally in middle-aged patients. The main results of the observations may be given as follows: "1. In a small number the free hydrochloric acid was found normal in amount, but the amount of pepsin lowered. In the majority of cases the proportion of the acid was subnormal, the amount of pepsin also being diminished, although digestion of a proteid tablet (a constant size being maintained through the experiments) was accomplished in from one and one-half to nine hours. In others the diminution of acid and pepsin was of such a degree that the proteid tablet was found undigested in the stomach-juice even after twenty-four hours. 2. Lactic acid was found present in all three of these groups. 3. Peptones were found in most of the cases, except in a few instances in the third group. 4. The proportion of the parapeptones always was found oscillating inversely to that of the peptones. 5. The rennet ferment was also uniformly present, but showed a distinct diminution in power in some cases of the third group. 6. The process of saccharification seemed to be normal. 7. The absorptive power of the stomach did not deviate from the standards, except in several cases in the third group, when it was found diminished. 8. The motor power of the viscus was diminished in but a few cases, and these in the last group. 9. With improvement of the patient's general health and the decrease of albuminuria and dropsy, the digestive power of the gastric-juice and the proportion of free hydrochloric acid usually increased correspondingly."

For the relief of vesical spasm, with retention of urine, after the failure at catheterization and a sitz-bath, Mesnard gave 1 granule each of bromhydrate of circutine and hyoscyamine, every quarter of an hour. After an hour's use of these remedies, the patient, an old man aged 67 years, passed urine freely. Next day he complained of incontinence, and the hyoscynamine was replaced by sulphate of strychnine, 1 granule every hour. He was eventually restored to health. On the other hand Irwin overcame spasm with retention, in a boy, by urethral injection of cocaine in 4-per-cent. solution. In the case of a young man with a primary attack of gonorrhea there occurred four days after the onset complete retention; catheterization was easily practised, but the retention continued unchanged after the withdrawal of the urine. The man had no desire to urinate, and yet there was not the least obstruction to the passage of the catheter. Rochet in this case administered ergot and electrical stimulation in the hypogastric region, with the result of quickly overcoming the symptom. A paralysis of the walls of the bladder from the intensity of the primary affection was probably the cause.

The relation between mouth-breathing and enuresis is not very clear; yet cases have been reported whre th removal of the naso-pharyngeal disease effectually arrested the nocaurnal enuresis. For example, Kerley reports the results obtained in the New York Infant Asylum, in the cases of twelve bed-wetters (nine boys and three girls), from the use of atropine, from 4 to 10 years of age. All were in fair health, and no cause for the affection was apparent; for this condition Watson used atropine up to its physiological action in 3 cases. After six weeks' treatment slight improvement was noted in 4; at the end of the third month these 4 wet the bed but once or twice a week. At the end of the fifth month 7 were practically well. Treatment was, however, continued for two months longer, and then dropped gradually. At date of report, nine months after treatment, there were no relapses. At the end of the fifth month the other 5, including the girls, were not much changed, but during the next three months the improvement was constant, though gradual. During the ten months there was only an occasional wetting, and the dose was dropped to one-half. After a year's treatment there was no longer any bed-wetting, and in six months after treatment there has been no return.

Kraus divides enuresis in the adult as well as in childhood into four groups: (a) those caused by functional disturbances of the genito-urinary tract, and cause the incontinence by maintaining irritation, as tight prepuce, sensitive clitoris, narrow meatus, sensitive urethra, weak sphincter, cystitis, pressure on the bladder in pregnancy, ascarides in the rectum, etc.; (b) those due to disorders of the central nervous system, as precocious or pernicious mental development and dreams; (c) those due to failure of the spinal reflex, as in locomotor ataxia, transverse myelitis, or tumors of the spinal cord; and (d) those due to organic changes in the genito-urinary tract. In the first group he advises the removal of the cause of irritation and the administration of rhus aromatica, beginning with 5 and increasing to 25 drops four times daily. In the second group he again advises the use of rhus aromatica combined with a nervous tonic or sedative, as may be indicated. In anemic cases he suggests the following formula:

℞ Fluid extract of rhus-aromatica. . . . . f℥v
Syrup of iodide of iron and elixir of
calisaya, each equally to make up. . f℥ij
M. Sig.: Half a teaspoonful four times daily.

The use of electricity on the urethral sphincter for incontinence in children can be tried in the following manner: A sound is introduced having a metallic bulb, the urethral part being protected by a coat of Indian rubber. As soon as the bladder is reached withdraw the sound slightly so that the bulb rests in the sphincter; this makes the sound one pole of the battery, the other pole being applied to the pubes or perineum. A feeble current should be used, the intensity being gradually increased. Where the incontinence is undoubtedly due to loss of tone of the sphincter, as in women who have received some injury after parturition, and who are likely to pass urine on the slightest cause—when laughing, going up-stairs, or riding horseback, electricity is good. A pad connected with the negative pole of a continuous-current battery over the lower dorsal region, and a small button electrode (the positive) over the perineum is the best way of applying it. A weak current is always advisable, the application being usually made for about eight or ten minutes every day or every other day for eight or ten times.

Faradism, with the current gradually increased, is recommended by many, a rectal electrode in the rectum and a sponge electrode over the mons veneris in females, over the perineum in males. Sanger advises systematic course of urethral dilatation in cases of enuresis, both in adult and young females. Introducing a metal catheter into the bladder, keeping the thumb over the aperture, and then firmly presses the instrument from side to side and backward away from the pubes, for eight or a

dozen times. During the course of treatment the patient is desired as much as possible to control the sphincter by means of the will, to drink as little as possible, and to warm the abdomen. A modified form of Brandt's treatment has cured urinary incontinence in women. The most essential part of this treatment is the direct treatment of the neck of the bladder by the finger in the rectum or the vagina. The following are the complete steps in this method of Brandt: 1. Tapotement of the lumbar and sacral regions. The patient stands with the feet together, bending slightly forward and supporting herself against a wall or some other firm object with her outstretched hands. A rapid, springy percussion is then made with the closed fist down both sides of the spine, beginning at the lumbar region and passing downward over the buttocks, after which the open hand is stroked firmly downward in the same direction several times. 2. The patient is dorsal position on a low couch as for vaginal examination, the operator in front of the patient, right foot on the ground, left knee on the couch, then bends over the patient, extends his arms and lays his hands, ulnar surfaces approximated and finger-tips toward the pubes, on the woman's abdomen, in the hypogastrium. Sinking the fingers deeply into the abdomen as if to grasp the bladder, a hand on either side of it, a side-to-side motion is made with each hand several times. 3. The index finger of the left hand is introduced into the vagina in such a manner as to partly encircle the neck of the bladder, and the right hand grasps the left wrist so as to regulate more evenly the pressure. This done, the finger in the vagina is made to vibrate against the neck of the bladder, compressing it against the pubes with moderate force; the same is then done for the other side of the neck of the bladder. In children the finger is to be introduced into the rectum rather than into the vagina. 4. Exercise of the adductors of the thighs. The patient in same position places her knees and heels together and raises her pelvis off the table, supporting herself on heels and shoulders. The operator now draws the knees apart, the patient resisting, three or four times, then, the patient pressing against his hands, the operator forces the knees together several times."

A STUDY OF VENEREAL CONDITIONS.

BY C. WILLIAMS, M. D., PHILADELPHIA.

CHRISTAIN, in a recent magazine article, has reported as the result of ten years of dispensary work, that he does not think much progress has been made in the treatment of acute cases of gonorrhea, but that the chronic cases are now handled more scientifically. He believes that syphilis is milder in its manifestations than it was years ago.

Oberlander, within the past ten years, has claimed that every catarrh of urethral mucous membranes has two sources; either the catarrh affects the muciparous glands alone, or the entire mucous membrane may participate in the inflammation, or else both glands and mucous membrane may simultaneously be affected. Such is the case in chronic gonorrhea. He divides it into: "(1) Catarrh of the mucous membrane—the true mucous catarrh, which gives rise to chronic urethral discharges. Here there is no infiltration of the glands. The mucous membrane is highly inflamed, of the velvety appearance, and is longer transparent. No vessels can be detected, and the longitudinal fold which normally is present in the urethra no longer exists. (2) Urethritis Mucous Hypertrophica.—This is a dry catarrh and is more circumscribed. The mucous membrane is less swollen and the natural longitudinal folds are yet visible. The mucous membrane is less glistening in appearance and non-transparent. There is no velvety swelling and the color is either of a bright or dark red."

Gonorrhea is the only contagious catarrh of the female genital organs; and naturally the more numerous the gonococci, the more easy the infection. When the secretions are free from gonococci, as in chronic gonorrheal discharges, they are no longer contagious. In women while the gonorrhea often begins in an acute form, yet more frequently, however, it may commence as a chronic affection. It is a curious fact but gonorrhea in the female has always been strangely neglected as regards treatment, yet it may be serious in results, for it can produce chronic discharges, metritis, endometritis, salpingitis and pyosalpingitis, ovaritis, peritonitis, derangements of menstruation and sterility, together with a variety of other complications not necessarily dependent upon the gonorrhea.

In every stage of the disease there is a peculiar reddening near the orifices of the ducts of the vulvo-vaginal glands forming a suitable soil for the development of the gonococci. The acute form usually extends into the uterus cavity lasting from two to three months, while it may still be considered in the acute stage; and even if the external symptoms, urethral or vulvar, have long disappeared, the disease may still extend in the acute form into the uterus, Fallopian tubes or peritoneum. An external discharge is the probable, not the necessary, accompaniment of the contagious conditions in the male. Complications have also taken place in women precisely as they do in men in the shape of cystitis, disease of the ureters and the kidneys. Chronic and acute inflammations of the glands of Bartholini also ensue as a consequence of this variety of gonorrhea. Sterility in a woman suffering from gonorrheal perimetritis may occur in two ways; either during the first coitus after impregnation, which will end in abortion or else after pregnancy has gone on to full term, inducing peritonitis with perimetritis. In rare cases the gonorrheal infection, while setting up a perimetritis, may not prevent the woman from bearing children subsequently. Burchardt regards the best medium for the cultivation of the gonococci to be human blood serum. An examination of the discharge shows that during the first stage of the disease the gonococcus settles and multiplies upon the pavement epithelium of the fossa navicularis, but that very soon afterward it penetrates between the epithelium cells, causing them to exfoliate. "They then continued their wanderings toward the papillæ, at which the apparently arrived about eighteen hours after injection. A migration of white blood-corpuscles from the papillary vessels now ensued, so that the secretion which contained at first but epithelium cells and gonococci, either isolated or contained within the epithelium cells, now became sero-purulent. Later on, the gonococci entered the lymphatic spaces of the papillæ and the deeper tissues, where they rapidly multiplied; but it is only after the mucous membrane has become soaked by the imbibation of serum, and through the migration of the white blood-corpuscles, that the deeper tissues absorb the gonococcus to any considerable number."

For this reason many authorities believe in the abortive treatment when given early, on the ground that in the first two or three days the gonococci do not penetrate beyond the fossa navicularis and only after a week do they enter the lymphatic spaces. To abort syphilis, the patient urinates, then briskly rubs the anterior wall of the urethra with small tampons of cotton, with the idea of rubbing off the epithelial layer of the urethra,

when the physician applies a 2-per-cent. solution of nitrate of silver, which is repeated on the next day.

Guyon warns that if forcible injections be made into the urethra, they should be confined entirely to the anterior portion, as the posterior portion is sensitive and likely to be injured. It is better, as a rule, never to make a forcible injection into the urethra under any circumstances, whether into anterior or posterior portion. He uses what he calls "instillation," by means of a bougie which holds one or two drops of medicated fluid. This bougie instillation is carried down to a point just anterior to the membranous portion, and then the fluid is allowed to run anteriorly. To prevent the immediate return of the fluid of a boule of 20 to 21 French size is used, washing out the anterior portion of the urethra previously. Nitrate of silver in solution from 2- to 3-per-cent. in strength is recommended.

Sigmund studied the vaginal secretions of 57 prostitutes to determine the location of gonorrhea. Of these, 34 had recent gonorrhea, and three gonorrhea of from three to five months duration. In all these cases he looked in the secretions for gonococci. He came to the following conclusions:

"(1) In all cases of gonorrhea the urethra is involved; then in a large proportion of cases (4 to 7 per cent.) the mucous membrane of the cervix, and in quite a number of the cases the mucous membrane of the uterus, and occasionally the vulvo-vaginal glands. (2) In all cases of recent gonorrhea a gonorrheal urethritis is present. Even if the secretion be scanty, it still contains gonococci. (3) A long time after the disappearance of the gonococci from the urethral discharge they may still be found in the cervix and body of the uterus. (4) The gonococci do not settle upon the mucous membrane of the vagina or vulva. When found in the vaginal discharge, they have been conveyed from the neighboring diseased mucous membrane."

Many fatal cases of gonorrhea are recorded; in the vast majority of cases it results from some imprudence or folly on the part of the patient. Even in gonorrhea confined to the urethra anterior to the compressor urethræ muscles, which is usually harmless, fatal cases have been published.

Again abscesses of the prostate, when the pus is discharging into the urethra, usually disappear rapidly; but not frequently a prostatic abscess may continue indefinitely and finally prove fatal. For example, Pittman reports a case of prostatic abscess which, with the exception of a difficulty in urination necessitating the use of the catheter, presenting nothing unusual, developed a fever, and the patient died six days after admission into the hospital. On the post-mortem an abscess was found between the rectum and bladder. Murchison reports a case of a patient with gonorrhea who was brought to the hospital in profound coma, death ensuing three hours after entrance. On post-mortem the entire urinary passage, from the anterior portion of the urethra to the pelvis of the kidneys, was found intensely inflamed, the mucous membrane covered with pus, both ureters full of pus, and the kidneys enlarged and of a deep purple hue. Two other cases, one of Murchison's and one of Delafield's, where acute gonorrhea in the female terminated fatally, are quoted by Post. In both cases renal disease was found on post-mortem, Murchison's presenting acute nephritis and Delafield's numerous abscesses. Peritonitis and subperitoneal phlegmon are among the possible complications of gonorrhea. Besides these there are the remote effects of gonorrheal inflammation which are propagated through the intervention of the vas deferens seminales, the bladder, the ureters and the kidneys. Peritonitis after inflammation of the cord has been reported by Hebra, Ricord and Fournier. Peritonitis after prostatitis is said to have been observed by Ricord, while Stanley reported two cases of complete motor paralysis of the lower extremities and the sphincter, after gonorrheal infection.

The points in diagnosis between the various venereal ulcerations have been studied by Paul Thiery with the following results: "The presence or absence of elastic fibers in the secretions of the chancre (initial lesion) chancroid and herpes, may be made an aid in diagnosis. That when elastic fibers are found in the scrapings, then the diagosis would rest between the initial lesion and the chancroid, and exclude herpes. The diagnosis between the syphilitic and the simple chancres could be positively made, yet he could incline toward the latter. When no elastic fibers are found, we have to deal with herpes or the initial lesion. Its transitory character and the abscence of epithelial cells in the scrapings would readily differentiate the former from the latter; but it might also be a chancroid. From the data given above we find that simple chancres (chancroids) which do not present elastic fibers are rare. A search for elastic fibers in the subpreputial discharges, when there is phymosis, may be of value in diagnosis. Thus in these discharges we may hesitate between blenorrhagia, herpes or simple balanoposthitis, the initial lesion of syphilis or a chancroid, but if the pus is examined microscopically and we find that it contains gonococci, then we have a blenorrhagia. If it contains no gonococci and no elastic fibers, then we have to deal with balano-posthitis or initial lesion, if it contains elastic fibers alone, we have to deal perhaps with the initial lesion, but more probably with a chancroid."

Finger, as reported by Sturgis, has instituted a series of experiments to determine whether there is any specific virus to the chancroid, and finally accepts the view that it is the product of inoculation of an irritating pus upon a sufficiently irritated skin or mucous membrane. The first series of experiments were directed to test the effect of chemical irritants upon syphilitic persons, with the following results:

"(1) Croton oil inoculation has produced pustules and ulcers as large as a lentil, requiring eighteen days to heal. Pus taken from them and inoculated on a second person resulted in two generations of aborted pustules. Inoculation with tartar emetic and sulphuric acid had a negative result. (2) Inoculation of syphilitic persons with pus of an acute urethritis. The results were for the most part negative. The utmost that was produced was a slight abortive pustule. (3) Inoculation of syphilitic persons with non-specific pus. Against a series of negative results the pus of an acute adenitis resulted in the production of phagedenic ulcerations inoculable for generations. The inoculation of lardaceous ulceration with an erosion of a frenum resulted in two cases in the production of small non-inoculable ulcers. (4) Inoculation of syphilitic persons with syphilitic pus from papules and initial lesion resulted partly in negative and partly in positive results. In the positive results the pustules and small ulcers produced were inoculable for generations, and it is especially noteworthy that the inoculations with the diphtheritic exudations of initial lesions and mucous patches always resulted negatively, while the inoculations of ulcerating initial lesions and mucous patches afforded positive results.

The second series of experiments were inoculations upon non-syphilitic persons. (1) Inoculation with pus resulting from chemical irritation. Croton oil and tartar emetic produced abortive pustules inoculative at the ut-

most for two generations. (2) Inoculation with non-virulent pus. The result was to produce but transitory and slight inflammatory reaction. (3) Inoculation of the pus of acute urethritis resulted in producing redness, papules and pustules of transitory character. (4) Inoculation with the pus gummy products. The result was to produce no local changes with the exception of a transitory redness at the point of inoculation."

Anglada reports 32 cases of chancroid treated with salicylic acid, for which he claims the following advantages: "It is simple, for in the majority of cases no more than two applications are required in the twenty-four hours. In four or five days the ulcer loses its specific character, and then only a simple dressing need be applied, and lastly it produces hardly any pain or inconvenience." The surgical treatment of buboes consists in making a deep incision and the gland removed under antiseptic precautions as soon as fluctuation is detected. If a clean wound is obtained, the edges are sutured; but usually the wound is tamponed with iodoform gauze and allowed to heal. A substitute for iodoform has been suggested by Chassaignac, who finds the following objections to its use: (1) On account of its odor, and (2) that when used upon a large ulcerated surface, it may be absorbed and produce toxic symptoms. He therefore advises the use of the subiodide of bismuth, which is tasteless, odorless and insoluble. When dusted upon a raw surface, it produces a thin, silvery film like that produced by nitrate of silver. It is painless and, in fact, like iodoform, is antiseptic, having a marked healing effect upon venereal sores.

THE TREATMENT OF ULCERS OF THE LEG.

BY J. H. ANDERSON, M.D.

A SIMPLE ulcer is scarcely ever able to maintain its position in any part of the body except in the lower half of the leg. As a result, such an ulcer occurring elsewhere in the body could not be called a simple chronic ulcer excepting it were a bedsore or some condition which I will quickly describe. A sore of such a character and length of standing is almost certain to be something specific in its nature, tubercular, cancerous or syphilitic. The only exceptions are ulcers due to some local irritation, such as that caused by the chafing of a bare, ragged nail upon the great-toe, which is speedily cured by the removal of the cause. Ulcers of the anus, commonly called fissures, occur within the region of the anus and persist because from time to time they are torn open by the pressure of passing feces. The little ulcer occurring in the middle of the lip is a common sight in winter, while an ulcer appears in the skin under a hard corn from time to time. Should we be unable to find any local reason for these ulcers on the lip, toe, anus, etc., then it is well to suspect syphilis, unless tubercular or cancerous infiltration can be diagnosed. Hence these ulcers which so often appear and hold their place on the lower part of the leg demand special care and treatment of their own.

By many writers varix is regarded as the most frequent one. This is due to the fact that the internal saphenous vein has a long, comparatively unsupported, course just under the skin, longer than any other vein in the body; necessarily it bears the weight of a long blood column. The frequency with which ulcers appear show that its coats are scarcely equal to its requirements. Varicose veins do not interfere necessarily or directly with the circulation or the nutrition of the skin for the blood-current through the small vessels of a part is but little, commonly not at all, affected by the increased caliber or varicose condition of the vein leading from it. This is explained as follows: "The blood-stream in the dilated vein itself is slowed, but not so that in the tributary vessels any more than the stream through a pipe or system of pipes is affected by the bulging of the tubes at one or more parts. An illustration in point is furnished by the testicle, which does not seem to suffer in size or structure or activity in consequence of varicocele, even though the dilatation of the spermatic veins be very considerable. The way in which a varicose vein acts injuriously upon the skin is, first, by throwing the covering skin into prominence, and so subjecting it to friction, which may induce irritation or inflammation, and often leads to pigmentation or other degenerative changes, and perhaps may induce ulceration of the skin. Secondly, these changes are further promoted by the pressure of the dilated vein, causing atrophy and absorption of the subcutaneous tissue, including the blood-vessels, and so interference with the blood supply to the skin. Thirdly, the stretched vein-walls and the immediately investing tissue are liable to inflame, and the inflammation, with extravasation or proliferation, or both, of cells, spreads around, causing edema and duration of the subcutaneous tissue, and probably inflammation. Not infrequently has the dilated, soft, fluctuating vein, thus circumstanced with its tender surroundings and red covering of skin, been mistaken for an abscess and opened, much to the discomfiture of operator and patient, when blood only was seen to issue instead of pus. Fourthly, the slowed blood-stream in the stretched and more or less altered, epithelial lining of the dilated vein often leads to the formation of blood-clots, which are commonly attended with inflammation of the vein and its surroundings, extending to and involving the skin."

While the blood-clots usually disappear and the channel in the vein becomes restored, yet the effects on the skin may nevertheless remain. This damage rarely takes place above the knee, even although the vein in the thigh may be considerably more dilated and tortuous than in the leg; nor do they attend upon varix in other parts of the body, except about the anus, where the conditions are peculiar. It is necessary to search for some other further condition which does this damage.

One authority ascribes one cause to be the arrangement of Anglo-American garments, so that to permit the other foot to sweep by without contact, the human leg at the ankle is reduced to the smallest possible dimensions. Consequently a greater weight is borne upon a given transverse sectional area than in any other portion of the body, making the leg and ankle very liable to fractures, periosteal affections and to rickety conditions. It places all tissues at a considerable disadvantage. Comeliness is given in this way to the leg and ankle, but like many other peculiarities of the human form its pathological disadvantages are evident, for the tissues, being compressed, suffer in vascularity. It is a well-known anatomical fact that the skin lying upon the surface of the bone and the fasciæ, separated only by a thin layer of connective tissue, is very liable to suffer from slight injuries. These factors then which are the smallness of weight-bearing area, and the consequent compactness and relatively low vascularity of the tissues, with their exposure to harm, are additional causes in the formation of leg ulcers.

Then it is well known that the shape of an ulcer least favorable to healing is the circular, for the reason that the skin-forming margin bears the least ratio to the diseased surface. The more irregular a margin the

quicker will the healing be in consequence. Soft, swollen ulcers with possibly a thick, white overhanging edge of cuticle will commonly, under moderate carefully applied pressure by adhesive plaster or other means, soon acquire a level edge. Then a delicate red film of cuticle may be seen extending from the edge over the granulations. As this proceeds and approaches the center of the ulcer it slows, where the greatest difficulty in healing is encountered, as this part is farthest from granulating edge. If the surrounding tissues have become hardened the work of repair is slow. There is always the tendency to break out again, which makes this condition so troublesome.

The Thiersch method of cuticle grafting is the most efficient method of treating these obstinate cases. First a few days' rest in bed, to bring the tissues into a fairly healthy state, rendering the part as aseptic as possible, the granulations are cleaned off to expose the fresh surface. After the bleeding has subsided, it is covered over smoothly and carefully with thin layers of cuticle razored off, with the thinnest possible stratum of subjacent cutis from some healthy region which has also been rendered aseptic. Then a piece of thin, soft oil-silk the size of the ulcer is applied. The limb is covered from the ankle to the knee with septic cotton-wool and a light, soft bandage. A few days later, after the dressings are removed, the cuticular covering will probably be found adherent and it will usually go on to the formation of good skin much sounder, softer, and more enduring than that which would have resulted after months of the old treatment. This method can be adopted in earlier stages, before the ulcers are chronic, with good effect, excepting that it is hard to get the patient to realize the importance of such treatment.

Skin-grafting, which is the cutting out of small pieces of the whole thickness of the skin, is the old-fashioned way. It is not so good as cuticle-grafting, for the ulcer is not so well covered, and the skin pieces did not so firmly cohere to form healing spots.

Should the ulcer be spreading, exhibiting a foul discharge and decomposing fragments, it is well to wash it by the dripping of water, or keeping the limb in a warm-water bath, or by frequent changes of wet antiseptic dressings, the so-called "antiseptic poultice." This is commonly due to an atonic condition of health. The use of some soothing application, with the administration of aperients, will check the progress of destruction, and the use of tonics and rest in bed or on a couch will generally bring matters to a better state in a few days.

When the tissue destruction is out of all proportion to the inflammatory cause, the prognosis is bad, for they depend upon failing health, combined perhaps with underlying disease, such as diabetes.

Should the ulcer be neglected for a long time, the thickening process finally attacks the periosteum, producing thickening of it and of the underlying bone, often running around the bone, and even extending to the fibula. One case has been reported in which the ulceration attacked the posterior tibial artery, producing fatal hemorrhage. Should an ulcer penetrate the deep fascia, involving the subjacent muscles or tendons, the muscular movements are a serious hindrance to the formation or maintenance of a scar. Here the application of splints or plaster-of-Paris bandages to the foot and leg, or even division of the implicated muscles or tendons, is indicated. But the outlook is bad, for the tendons or muscular fibers remain involved in the cicatrix and produce trouble later on.

The most painful ulcers are those beneath and behind the inner malleolus, where there is a plexus of small dilated veins. The application of a splint along the back of the leg, with a foot-piece, is indicated, or a plaster-of-Paris bandage, leaving the ulcer free, is excellent.

The application of a blister or cantharides to the skin around obstinate ulcers has been tried and occasionally it has been found to be excellent. It acts by causing the effusion of fresh leucocytes, clearing away the products of past inflammation, leaving the tissues free for reproductive attempts. But the idea never had much success and is seldom tried.

Evenly applied and long sustained pressure acts admirably in promoting the absorption of inflammatory products, and supporting the blood-vessels. Its good effects are seen when the tissues about the ulcer are thickened by the presence of more or less solid effusion and lay in a comparatively indolent state. A flannel bandage carefully applied regulates the circulation not only by exercising pressure, and keeps the limb warm. The use of a so-called Randolph bandage, being of rubber, evenly applied, is far better than a rubber stocking. In using adhesive plaster in broad strips over the ulcer and partially, not wholly, encircling the limb, it acts well in old sores with thickened surroundings. It is well to soak it in warm water, after which it can be more evenly applied. It should be supplemented by a soft bandage over the foot and leg, and should be allowed to remain undisturbed for at least two days.

"Gelatin paste," composed of gelatin, glycerin, zinc oxide, and water, has been used. Softened by heat, it is painted over the limb and covered by a bandage. It should be allowed to remain undisturbed for several days, and is especially adapted to cases where there is an eczematous condition of the skin. Chronic eczema of the leg is often relieved by this application of gelatin paste. Zinc oxide ointment is very serviceable in these cases, smeared on the edge of the ulcer; unirritating, it forms a cake about the ulcer which should only be occasionally removed. Many ointments and lotions have been tried, stimulating, sedative, or neutral. Cleanliness, pressure, adhesive strips over the ulcer, flannel bandages supported by an outside rubber bandage are the keynotes. Remember that many a troublesome leg, ulcerated and eczematous, is made worse by ointments or lotions under oil-skin, or by poultices.

This class of chronic leg ulcers is a disease of middle life, common in married child-bearing women, especially whose domestic duties prevent the rest requisite for repair, and in men whose business keeps them all day upon their feet. When these ulcers appear in the aged they are apt to yield to appropriate treatment more easily than at earlier periods of existence. It is possibly due to the fact that the aged work less and the tissues being drier and with less sensitiveness, are less liable to suffer from the various disturbing causes which lead to ulceration for the same reason that the old are less susceptible than the young to contagion.

The unfortunate side of this disease is the tendency to formation of epithelioma. Subject to irritation and having a lower nutritive force, chronic ulcers may degenerate into epitheliomas. This infiltrates the skin, makes a raised, hard, knotty edge, spreads over the ulcer, giving it an uneven, coarsely granular surface, with thin bloody excretions. Destroying the subjacent tissues, it produces ragged holes in the bones almost as if they had been gnawed by some rodent. This epithelioma is not a painful affection, and its history is that it is usually allowed to advance until amputation is necessary.

The relation of chronic ulcers to the general health is most important. There is a mutual interdependence of

the several parts of the body, and hence an ulcer in the skin of the leg may be a comparatively little matter, yet the abnormal process concerned and the discharges, together with the attendant nerve-irritation, must have a depressing influence. There appears a general depression of which some persons are conscious; they do not feel well during this time, and naturally feel better when it is healed. Formerly the question arose whether in certain slightly deranged conditions of the system the influence of the ulcer was beneficial and the effect of its closure prejudicial. It was looked upon as in some way supplying a rising want, on the plan of a purge or a sweat. But there is nothing in this theory. It should be relegated to the lumber attic of old theories and superstitions.

The ulcer may have originated from an accident or some local exciting cause, and had at first no connection with any particular state of the system. The long continuance produces depressed influence, and may have become more or less advantageous or necessary to the system which has in time been habituated to it and accustomed to rely, as it were, upon it. Patients with chronic ulcers commonly belong to the class of persons whose work prevents much heeding of slight health derangements, and who are, therefore, not likely to observe, still less to remember, any variations. We should inquire into the general condition of each patient with an old ulcer, and the history during the progress of the ulcer, more particularly whether the variations in it have been associated with any variations in the health. Alter the diet, prescribe some mild aperient to be continued during and for some time after the healing of the ulcer.

The rapid and decided method of cure by cuticle-grafting renders precautions of this sort excellent. If possible use cuticle-grafting, but generally the patient can not or will not spare the time for this procedure. In this event try the use of cleanliness, support and rest. Remember that the ring around the ulcer must be softened to admit the blood supply to act, and in all cases don't lose patience.

SARATOGA AS A HEALTH RESORT.

THE attention of the health-seeking public was first directed to Saratoga on account of the medicinal qualities of its waters. For many years the springs were popular as a health resort, but in process of time the old hostelries were supplanted by large and fashionable hotels with all the conveniences and surroundings to attract the pleasure-seeking crowd until now it is mostly a resort of fashion and the patrons of the gambling fraternity in the club houses and to a certain extent in the racecourse. None of the spas in Europe visited every year by the health-seekers in this country can compare with Saratoga if properly utilized and the treatment under the direction of specialists accomplished in the study of the various diseases for which these waters have been found beneficial. The leading spas in Europe in which may be included that of Carlsbad each spring is only beneficial in a certain class of diseases. But the results are not obtained so much by the special character of the water as by the definite system of application, such as drinking, bathing, regimen, diet and exercise, under the direction of physicians who have made a careful study of the waters. Saratoga has the advantage of any other spas in the world from the fact that in this great chemical laboratory we have some thirty-two springs each with different constituents, and covering in their entirety nearly all the constitutional diseases to which the human system is liable. One reason why so little benefit arises from the use of the waters, is that they are generally taken at random without that medical advice so essential to secure beneficent results. The hot springs of Virginia and those of Arkansas are visited yearly by thousands who find there the health for which they seek, but these springs are beneficial only in a certain class of diseases such as rheumatism and syphilis under the careful direction of physicians who understand thoroughly the character of the waters and the condition of the patients marking out as a point of the treatment the exercise and diet all of which should be carefully followed.

We are glad to learn that steps are about to be taken to erect at Saratoga a large sanatorium to be open the entire year and fitted with all the appliances of modern science for the treatment of the various forms of chronic disease for which the waters together with the accessories of a well-regulated scientific institution might be of so much benefit. An institution like this would attract the attention of health-seekers from every part of the world without interfering with the present most attractive features of Saratoga as a fashionable summer resort.

PHILOSOPHICAL OLD AGE.

When John Quincy Adams was 80 years of age, relates *Everywhere*, he met in the streets of Boston an old friend, who shook his trembling hand and said: "Good morning, and how is John Quincy Adams today?" "Thank you," was the ex-president's answer. "John Quincy Adams himself is well, sir; quite well, I thank you. But the house in which he lives at present is becoming dilapidated. It is tottering upon its foundation. Time and the seasons have nearly destroyed it. Its roof is pretty well worn out. Its walls are much shattered, and it trembles with every wind. The old tenement is becoming almost uninhabitable, and I think John Quincy Adams will have to move out of it soon. But he himself is quite well, sir; quite well." With that the venerable sixth president of the United States moved on with the aid of his staff.

ELECTRIC BATH.

The electric bath is one of the newest things, although it isn't a bath at all. A thick robe is entwined with wires, and this is donned. Then a current of electricity is switched on, and the wearer of the electrical robe soon finds his body getting warmer, until in a little while he perspires as freely as if he were in a Turkish bath.

THE NEW SURGEON GENERAL.

COL. Robert Maitland O'Reilly, who entered upon his duties as Surgeon General of the Army September 7, 1902, is one of the best known officers in the service. His promotion will give general satisfaction to all who know of his long years of faithful service. Graduating from the Medical Department of the University of Pennsylvania Col. O'Reilly entered the regular army as acting medical cadet in 1862, and served throughout the war. At the time of his appointment he was chief surgeon of the department of California.

—A leading paper in Berlin sees an evidence of the growing Americanization of the world in the plan to establish a post-graduate medical school at Frankfort after an American model for which five hundred thousand dollars have already been contributed.

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"THE corporeal frame is but the mechanism for making thoughts and affections *apparent*, the signal-house with which God has covered us, the electric telegraph by which quickest intimation flies abroad of the spiritual force within us."—JAMES MARTINEAU.

MIND-BUILDING.

DR. Samuel Schenck, a distinguished embryologist, in Vienna, died recently in Schwanberg. Dr. Schenck was principally known as the author of a theory on the determination of the sex which, however, when subjected to test, proved to be simply a theory, and not always reliable. The theory claimed that the sex of the child is influenced solely by the mother and that the difference in the number of corpuscles in the blood of a man and of a woman is the basis of the difference in sex, the man having the greater number. It was claimed that the sex could be influenced by the food given to the mother and that nitrogenized food which should rid the mother's system of sugar was favorable to the birth of a male. Dr. Schenck in the last years of his life attempted to still further show that not only by proper diet, the mother could determine the sex, gratifying her desire for a son, but might also determine to a certain extent the quality of the brain and defining what would be their most marked mental characteristics, and the profession in which they would be most successful. Two of Prof. Schenck's sons are physicians and intend to devote their professional career to developing their father's theories.

Hippocrates declared that all men were born with equal capacity and that their mental differences were owing to the different kinds of food they consumed. Prof. Elmer Gates holds a different theory and claims that the brain, which is a mind machine, is a piece of physical mechanism and like any other machine, it may be built up, beginning with the child, and put together bit by bit. Hitherto, Prof. Gates says, genius has been an accident. In the future it will be classed as a mind art and will be created artificially, in which any one may become literally the architect of his own mind machine, rebuilding it or altering it as he sees fit. Every thought that enters the mind, declares Prof. Gates, is registered in the brain by a change in the structure of the cells which is a physical change more or less permanent. Think of a certain thing a number of times every day for a month, and the result must be a building up of that part of the brain of which the matter in question is considered. Blood flows to that portion of the mind machine and does to a great extent the constructive work, multiplying and enlarging the cells locally. Nearly all the thinking, says Prof. Gates, is done without your knowledge. Ideas frequently leap into the mind as if from nowhere, and they are likely to be the best ideas. They are the fruit of unconscious thinking; the mind has ground them out, without knowing what it was about. It will be seen that Prof. Gates does not take into account what is now considered, by leading psychologists, an important factor in the line of scientific thought—personal inspiration: a direct influx from the great storehouse of thought gathered through the ages in a spiritual world. What Prof. Gates and Dr. Schenck call the science of mind, which they claim can be built up by proper food, surroundings and education, fails to take into consideration heredity, which includes a predisposition to certain lines of thought, tastes and physical development. The strongest and most harmonious minds can become perverted and entirely changed in their line of reasoning by a derangement of physical organs. Voltaire affirmed that the massacre of St. Bartholomew was due to the incapacity of the King to digest his food. The Indian Mutiny was caused by British stupidity refusing to recognize certain dietary prejudices among the natives, while indigestion caused by bad cooking paralyzed the Little Corporal in two of the most critical battles of his career. The Hell-fire and damnation theory of Jonn Calvin, which for more than a century cursed the world and filled our insane asylums with victims, was due to a dyspeptic stomach and kept up by minds equally out of tune with the Divine Laws of Love and harmony as a metaphysical fad. The investigators, of what they have been pleased to call mind art, and mind science, will undoubtedly find as they proceed in their work that they have only yet taken into consideration a very few of the factors which enter into the process of mind-building, and while they may determine to a certain extent the physical forces at work there is in the spiritual development and the connection of the divine with the human a something which can be only unfolded in the far future when the human mind has reached a higher plane and stands in closer relation with the harmony which exists throughout all the laws of nature each a part of, and in vibration with the Divine Mind, the Creator and Ruler of all.

THE FUTURE OF THE NEGRO.

WHEN, during the first half of the 19th century, the evils of negro slavery began to excite marked attention among the philanthropists of the country two remedies were discussed; one the colonization of the black population in some portion of Africa, and the other the abolition of slavery and their admission to the rights of citizenship. From these discussions were developed the colonization and the abolition parties, the latter absorbing the former and leading to the final extinction of negro slavery.

In the discussion of this question the Rev. Dr. Horace Bushnell maintained that the abolition of slavery would lead to the extinction of the negro race in this country as wherever two classes were placed side by side the higher type of civilization and the more cultivated intellect would gain that supremacy which would lead in time to the extinction of the weaker race. In support of his theory Dr. Bushnell instanced the fact that the North American Indians were rapidly disappearing before the Anglo-Saxon race with its energy and intelligence. He believed that the African race in this country, on the same principle, would gradually disappear unless cared for by their masters and their labor directed by them. Left to themselves the fatality from disease and improvidence would exceed by far the natural birth-rate. Recent statistics in the birth and death rate of the negro population show to a certain extent the truth of Dr. Bushnell's theory. Statistics carefully taken by Dr. Harris, Health Officer of Georgia, show a death rate of 52.11 per 1,000 among the blacks nearly double the death rate, 26.54 per 1,000, among the whites. Dr. Harris says that one-third of these births are reported as being illegitimate, while among the whites less than 1 per cent. are recorded as occurring out of wedlock. The negroes as a class have absolutely no conception of personal hygiene, and he believes that 50 per cent. of the negroes of the United States above the age of 25 have been affected with syphilis and that 90 per cent. of the men over 25 have had gonorrhea. The uterine, tubal and ovarian troubles among negro women traceable to gonorrheal infections would be astounding to one who did not have frequent occasion to examine them for such troubles.

Hoffman in his work on "Race Traits and Tendencies of the American Negro," said in the city of Charleston for the year 1890, for every 1,000 white children born there were 200 deaths, while the number of deaths in every 1,000 negro children was 461. In Richmond in the same year there were 187 deaths among every 1,000 white children born and 530 deaths among the negroes.

Statistics of criminality says the same authority show that the amount of licentiousness and immorality among the negroes is rapidly increasing. If these statistics are true, and they are published under official authority challenging public inspection, they present a gloomy outlook for the future of the negro race in this country.

THE SIGNIFICANCE OF FEVER OCCURRING IN KIDNEY DISEASE.

WHEN fever occurs during the course of nephritis its significance depends upon the character of the renal trouble and the stage of the disease at which it occurs.

It is well to remember, in the first place, that there is a certain amount of unreliability in the examination of substances in the urine. The amount of toxic materials which may be in the intestinal tract can be quite extensive and after absorption they are excreted through the kidneys. It is well to remember also that any slight disturbance of digestion may produce these poisonous materials, and in cases in which fever has been found they are present. It has been the history of the examination of urine that there is scarcely any subject more unsettled than that of the excretion of uric acid and no sooner has one observation been made than it is upset by some later observer.

As pointed out by Hare, if we will take the same man and give him the same food, the same exercise and the same general style of living, the results from the examination of the urine will vary from day to day owing to some undetected difference in the processes of oxidation and excretion. Again, different substances derived from foods act very differently upon the nervous system, for some produce elevation of temperature with great disturbance of function, while others produce poisoning without causing any rise in temperature.

The most common condition, as well as the most serious, in which fever is likely to occur in the course of diseases of the kidney, is uremia. There have been many theories to explain the clinical aspects of this state, for example: Traube explains the appearance of uremia on the basis of mechanics, ascribing it to a condition of repletion in the vessels and edema of the brain which produce a secondary anemic condition of the substances of the brain. This theory has been confirmed by the investigations of Otto and Bider, who demonstrated that uremic symptoms followed the injection of water into the cervical vessels. Unfortunately, however, it is true that many cases of uremia do not show the edematous condition of the brain substances or the membranes, and therefore can not be explained upon this basis. The various chemical theories which have been brought forward from time to time are none of them satisfactory. Possibly the most satisfactory is that of Bouchard, who believes that he is able to demonstrate in normal urine seven poisonous substances, these substances being a diuretic substance or urea, a narcotic poison, a temperature raising substance, a sialogogue, two convulsants, and a poison producing contraction of the pupil of the eye. It was formerly believed that uremia was followed by a rise in temperature, until Bartels, from a long series of experiments, stated that he could find but one case of uremic convulsions in which there was any fever. Undoubtedly, the most scientific belief of the day is that which ascribes as the cause of fever in uremia

the existence of some poisonous excitation of the heat regulating apparatus. Whatever the cause of the temperature in uremia, certainly the practising physician should be most concerned with the clinical treatment.

The cases generally are of two sorts, those in which the symptoms of fever are slow in approach and those in which the onset is very sudden. The class of cases of uremia in which the onset is sudden generally are those forms with convulsions, but there may be as much fever in comatose cases in which no convulsions have been noticed. A typical case of this sort is as follows. A case of acute nephritis in which the temperature is normal until the patient shows symptoms of uremia. The temperature quickly rises to 102°, when convulsions appear, the temperature then jumps upward to 104° or thereabouts. After nearly a week of this condition there is a decline in the fever and the temperature remains normal until another attack of uremia appears, which is ushered in by dimness of vision, headache and rise in temperature to about 101°. Stengel has reported a number of cases in which he has noted a rise in temperature before the first convulsion. He reports one case especially in which there was a period of five days of slow fever with a mild uremic condition before convulsions appeared.

The other form of fever in uremia in which the onset is regarded as rather slow, and in fact resembles in onset the rise of temperature in typhoid fever, has in fact occasionally been confused with this latter condition, and in truth the resemblance may be very close. The diagnostic differences, however, are the absence of intestinal symptoms and splenic enlargement and the typhoid eruption, and the presence of distinct leucocytosis. Of course, when typhoid fever is complicated with secondary nephritis, the troubles of the diagnostician are increased.

Another condition in which fever may rise in the course of nephritis is that which owes its origin to some complication such as pneumonia, pleurisy or pericarditis, or there may be a temporary rise in the temperature resulting from an acute exacerbation in chronic nephritis, or the development of pyelitis but this fever is low compared with that which is seen under similar conditions following rheumatism.

Another form of Bright's disease in which the temperature is elevated is at the onset of acute nephritis. This elevation, fortunately, does not last long enough to attract much attention, and it seems to be due either to an inflammatory or degenerative change in the kidney or to the poisoning of the system from the retention in it of substances which the kidney is in the habit of excreting; or it may be, on the other hand, that the causes which produce the fever may be the cause of the kidney disease and not its result. This branch of medicine offers still many attractive fields for investigation.

—The International Medical Congress will be opened in Madrid, April 23, 1903.

THE GROWING IMPORTANCE OF GASTROPTOSIS AND ENTEROPTOSIS.

MANY puzzling conditions have been cleared up by the investigation into this subject during the last ten years.

The symptoms which point to this condition are as follows. A faint feeling after rising; fatigue after some exercise, such as walking; sense of weight in lower abdomen and dragging in the epigastrium; flatulence and general constipation and frequent micturition. In chronic cases, coupled with this, there is a loss of flesh, neurasthenia, flaccid abdominal walls, protuberance of the abdomen and occasional diastasis of the recti muscles. Frequently there is noted a strong pulsating aorta and ribbon-like transverse colon can be detected above the navel. The liver has partly descended, while one or both kidneys may be movable. In women there is generally, in addition to this, an intense backache, and a prolapse of the uterus is common.

The great differential symptom is the fact that when relief is given the patient by the physician, standing behind her, encircles the lower part of the abdomen, supporting and lifting it carefully. If this gives marked relief it points rather to enteroptosis than gastroptosis.

When it comes to the question of treatment of this condition, the first thing to do is to look to the hygiene of the patient. This should be done by removing all pressure at the waist and suspending the clothes from the shoulders. Furthermore, the gastric, intestinal and bowel functions are to be investigated and regulated, and diet should be arranged to fit the symptoms. In the first place, the patient is, as a rule, neurasthenic, and then some such treatment as the "Rest Cure" may be employed, and certainly, nourshing food must be used to the fullest extent. In the treatment of the constipation, sweet-oil injections have been found to yield excellent results. Massage, exercise, electricity and cold baths are excellent things. Of course, special indications, such as nervousness and anemia, must be treated. For the lack of appetite, nux vomica, iron and quassia or some other bitter tonic will produce good results.

The use of abdominal binders and supporters is recommended, but it must be done in an intelligent way and not in a routine manner, for there is a tendency on the part of these binders to slip up around the waist, producing exactly the opposite effect from what is intended. The best thing to use is the ordinary rubber plaster long enough to fit around the abdomen and from seven to twelve inches wide. This will fit more snugly than any bandage, be more agreeable to the wearer, and will not slip out of place. This brace can be used for from five to ten weeks. If there is no irritation of the skin there may be used in conjunction with this plaster a zinc plaster such as have been recently obtained from Germany.

Einhorn, who has done a great deal of work in this branch of medicine believes that the proper treatment of

enteroptosis is a well fitting abdominal supporter and the use of ample nutrition. He believes in giving milk, bread and butter between meals. He also is a firm believer in the use of outdoor exercise, and electricity intragastronically. He does not believe, however, in the use of massage. The use of lavage of the stomach is excellent where the stomach is dilated or the retention of food results in a kinking of the duodenum.

In the treatment of women with displaced and torn perinei, in years gone by the specialist has performed antefixation, has used pessaries from time to time, repaired the perineum, and yet has had disappointment as a result. Undoubtedly, this is due to the fact that these cases are, many of them, cases of enteroptosis and the symptoms are more dependent upon dislocated kidneys, intestines or stomachs than upon antefixation or retroversion. Of course, operation can be performed when there occur symptoms of hydro-nephrosis, and Diehl's crisis, which are purely mechanical disturbances resulting from twisting of the vessels of the kidney.

To apply a bandage it is well for the patient to lie on the back with the hips elevated.

It is astonishing how many of these cases do well with the use of nux vomica beginning with ten to fifteen drops before each meal and increasing the dose until as high as 70 to 80 drops are given, combining this with feeling to the highest degree.

Despite all these advances in the treatment of this condition, the more one has experience with this class of cases, the less flowery becomes the prognosis and the more conservative becomes the views as to the recovery, for in many cases good results seem impossible to obtain.

VIRCHOW.

THE death of Prof. Rudolf Virchow in Berlin Sept. 5th at the age of 81 years will create a marked sensation not only throughout the medical but scientific world. It is seldom we find united in one man the scientist, the politician, the municipal reformer, the statesman, so eminent in every department, that his position in the front rank of the great men of the nineteenth century is established for all time. Prof. Virchow was the son of a small shopkeeper and farmer and took his medical degree at the Berlin University in 1843 with such distinction that he was immediately put in charge of the Charity Hospital. The radical reforms which he advocated and his pronounced sympathy with the Revolutionary party of 1848 led to his expulsion from his university lectureship. During his forced absence from Berlin and his connection with the little University of Würzburg which gave him shelter the experiments were made which resulted in his work on cellular pathology, which became the basis of a new science of physiology, elevating the science of medicine from the field of philosophical speculation to that of facts. Every new discovery of pathological facts has found an explanation in Virchow's theory that the cell had the power of propagating itself within an individual and the disorder or disease was due to the change brought upon it by outside action, and along this line modern medical science has taken its most successful course. His writings from 1848 to 1879 were voluminous and while he led the way in the investigation of the nature of disease and widened the knowledge of tumors, tuberculosis, diphtheria and the brain tissues, he applied his theories practically to the reform of medicine the improvement of hygiene public and private and of criminal and forensic medicine. In 1856 he was recalled to Berlin and made director of the pathological institute. For 42 years he was a member of the Berlin City Council and under his direction good water was supplied and a modern system of sewerage carried out and hospitals built on the best principles and so well equipped that Berlin has become one of the healthiest cities in the world. For 40 years he was a member of the Prussian Chamber and for 13 years represented the Berlin Constituency in the Reichstag. In the controversies between religion and the state he was one of the foremost advocates of Freedom. To autocracy he was always strongly opposed and a stout defense of constitutional rights brought him into frequent opposition with Bismarck. So bitter was their antagonism that the statesman actually challenged the scientist to a duel, which was only prevented by the mediation of friends. Virchow's work as scientist, reformer and statesman will always hold a high place in German history and in the scientific progress of the world.

NEW TREATMENT OF LEPROSY.

THE State Department at Washington issues monthly a pamphlet containing reports from the different consulates in the world of new discoveries in science and developments in various industries. In the July issue a report is made by Robert M. McWade, U. S. Consul at Canton, in which is detailed a thorough and systematic effort made in a hospital of that city to cure leprosy by Dr. Adolph Rasing, of Vienna, Austria. Physicians of the hospital and others of prominent standing who have watched the work and methods are convinced that while the treatment may not entirely cure leprosy, it will check the disease to such an extent that the patient can be given entire liberty. The treatment adopted is both local and internal or constitutional. General cold baths are given, followed by bath medicated with potass. permanganate or liq. calcis sulph., each bath being followed by friction of the indurated surfaces. Abraded or broken surfaces were treated with peroxide of hydrogen, sodii iodol, liq. arsenitis, liq. zinci chlor., ung. sulpho-ichthyol ammon., ung. hydrarg., chrysarobin, the strength and application of these remedies, varying according to the symptoms present, and only to perfectly clean surfaces.

The excretory organs were kept active and special attention paid to digestive disturbances. There were ad-

ministered internally acid arsen. and sulpho-ichthyol ammon. In pill form, ferri ammon., cit. et strych., sodii iodide, salicyl sodii, the remedies being pushed to their full physiological effect. After eight days, distinct improvement was manifest. The skin was somewhat softened, sensation showed signs of returning, healthy granulations appearing upon ulcerated surfaces. After a month's treatment pain and edema had largely disappeared and extensive ulcerated surfaces were quite healed. Dr. Rasing lived for months in a shack in the Sandwich Islands while studying and treating the leper patients. The experience thus obtained he is now utilizing with the assistance of the authorities of the Canton hospital with the most favorable results. The success he has obtained certainly exceeds that of any other treatment of which we have any knowledge.

From the same consular report we learn that Dr. Doyen, a noted surgeon in Paris has brought to the notice of the Academy of Medicine an albuminous liquid, the preparation of which is given, which administered in doses of 5 to 10 cubic centimeters is efficacious against the staphyloccus microbe which engenders the inflamed tumors known as boils, furuncles and anthrax. The serum employed has such a powerful effect that in two or three hours after injection all pain caused by the inflammation ceases. The injections, about two hundred in number, made by Dr. Doyen and fully specified by him, have never produced an abscess.

IMPROVEMENTS IN SURGICAL ANESTHESIA.

IT is a remarkable fact that general anesthesia as it is performed to-day, sprang Minerva-like, from the brains of their originators. A description of the classical operation in the Massachusetts General Hospital does not vary greatly from the details of the modern operation done to-day. So it is with chloroform and largely so with nitrous oxide. In hospital practice and among advanced surgeons various details have been introduced, but in the average operation throughout the country, nothing new has been devised.

This is not because of lack of activity among investigators. For years new drugs and new apparatus have been prepared to take the place of ether and chloroform, and the columns of medical journals again and again are filled with enthusiastic accounts, but the same routine has been followed. These reports have been followed by less favorable comments until generally the drug or apparatus has dropped into the limbo of discarded therapeutics. Lately observers have turned their attention to devising improvements with our present means and with excellent results. The use of nitrous oxide gas as an anesthetic preliminary to ether has been recommended ever since its introduction by Dr. Wells in 1844. Nitrous oxide has one excellent requirement: it is practically a safe anesthetic in small quantities and carefully administered. As a preliminary anesthetic it has been used in Guy's Hospital, London, for over twelve years, while Canter, Prevost and Kelly have reported between them over fifteen hundred cases in which its preliminary use has been most satisfactory. Its advantages are the absence of the disagreeable symptoms often found in the early stages of etherization, it has no taste or smell, and a few deep breaths produce unconsciousness. It is given first and the ether is then run in with the gas and can be pushed rapidly, rendering the patient ready for operation in three to five minutes. There seems to be less nausea and vomiting following an operation begun with nitrous oxide which makes it of especial value in abdominal cases.

In a recent issue of the *University of Pennsylvania Medical Bulletin*, Norris gives a scientific report on one hundred and fifty cases of nitrous oxide and ether anesthesia compared with one hundred and fifty similar cases of pure ether anesthesia. Using the Bennet apparatus, which consists of a mask covering the nose and mouth, the cone is adjusted to the mask and fitted with gauze on which ether can be poured. It is so arranged that the ether can be given diluted in form or in full strength, while by means of a second cone above the first containing a valve, the patient is enabled to throw off the expired air. To this valve-cone the plain rubber bag of nitrous oxide is fitted, and contains two gallons of gas, worth two cents a gallon. It has a stop-cock, weighs twelve ounces and can be refilled while in use. The ordinary rules of anesthesia are followed, such as the abstinence from food, excepting that a glass of sherry or a half-ounce of whiskey and brandy is given five to ten minutes before the anesthetic, if the patient feels faint. A piece of gauze is placed over the eyes, the lips and mouth are anointed with cosmoline and the mask is placed over the nose and mouth. After two or three inhalations of the gas, the ether is gradually run in and given in full strength after eight to ten.

Norris has made two charts showing the results obtained in the two methods of anesthesia, which show that the surgeon has ten minutes more time to operate in the newer method, and that 41 grams less ether are required to produce complete anesthesia. The pulse rate is lower and more regular, ranging from 90 to 105, while in regular etherization it ran from 90 to 125. It required an average of three and a half minutes under the new method to anesthetize, and thirteen and a half under the old. The respiratory rate remains about the same in both methods. Norris states that the apparatus has paid for itself in the decreased use of ether in five months' time, making it a cheaper and more satisfactory method of anesthetization.

The contraindications to the use of nitrous oxide as a preliminary anesthetic are (1) arterio-sclerosis on account of the increase of the blood pressure. (2) Very youthful or very advanced age in the patient. The very young will not breathe as directed and they usually take ether or chloroform very well; the very

old find it rather difficult to breathe deeply and they also take ether very well. In addition to this, most patients over seventy years of age have a tendency to arterio-sclerosis. (3) Any of the contraindications to the use of ether are cogent against the use of nitrous oxide, but as these drugs are used together, it does not diminish the field of activity.

OPTICIAN OR OCULIST?

WE have before us a circular letter from an advertising spectacle maker, to the medical profession, asking the latter to refer cases for refraction and holding out the usual inducements for trade. We need not go into the ethical points involved. If this merchant violated all the canons of professional life and then besought our support with prescriptions for lenses we might admire his audacity and pardon the purely commercial spirit manifested. Druggists who solicit our prescriptions for medicines sometimes wander far from the standards of a profession, but are, nevertheless, reliable and honest. The optician in question is endeavoring to insert a wedge to split apart the medical profession itself; the very endeavor shows that he recognizes a plane of cleavage and we wish to use his letter as a text, not of a discourse on ethics in the ordinary sense, but of a brief article on the importance of the solidarity of the medical profession.

This optician has placed himself frankly in the same relative position as a druggist who would address the general practitioners of a city with the request that they send to him their cases in, let us say, genito-prinary disorders, for diagnosis, prescription and dispensing, either as a matter of personal good will, of mutual but indirect benefit, or as a plain matter of commission business. He is saying to the general practitioner, "Combine with me, regard as an enemy the man who is a physician as well as an eye-tester, build up an extra-medical instead of an intra-medical specialism, trust your patients who need special care to a business man instead of a doctor, come in and see what I can do for you."

If the general practioner has in mind the welfare of his patient, he will consider that a defective eye is not merely a badly ground or poorly put together camera, to be remedied by lenses which shall deflect rays of light in a manner to offset the deflections of the cornea and crystalline lens; it is a diseased organ, though happily the disease is in a quiescent state. Such an eye needs a physician, not simply a physicist. But suppose the general practitioner or the specialist who is not an ophthalmologist, regards merely his own interests, it would be wise to consider that, if a liberal commission is offered by the optician, he may be temporarily better off by accepting it than to run his chances on obtaining such favors as the ophthalmologist may ultimately confer on him. On the other hand, the advertising optician will, in the long run, prove a more formidable opponent than his ethical rival who has conscientiously fitted himself for thoroughly caring for the eye or other special anatomic part of the body.

It is significant that the circular in question emanated, not from a tyro in business, but from a man who had successfully established and maintained a business of eye testing and fitting. The worst feature of the whole matter is the fact that he evidently believed that such a circular would pay and that, as a business proposition, his action was a shrewd one. There certainly exists a class of physicians who have no conception of the value of professional solidarity, who do not realize the urgent need of maintaining a proper *esprit de corps*, who regard their professional brethren, not only as rivals, but as antagonists. There is a still larger class who regard other general practitioners as colleagues but who fail to realize that the specialist is equally a member of the professional body and equally interested and equally influential in maintaining all conditions that tend toward the welfare of the general medical profession. That there are specialists who call themselves members of the regular medical profesison but who are shysters in their methods of dealing, either with patients or with their colleagues, no one can deny; but, as a whole, it seems to us that they are as honorable and fair in their treatment of other physicians, as well educated and as competent, as the average of the general profession. The great majority of specialists—we omit all reference to quacks who use this term as a euphemism—are men who have learned their special field of usefulness by long experience in general practice. They are thoroughly familiar with and in sympathy with the ideals of the medical profession, they are no more a source of rivalry to their colleagues in general practice than they would be if they had retained their general practice. Specialism in medicine can no more be rooted out than can the same inevitable tendency in any other department of civilized activity. Disregarding the ethical status of the problem, which is obvious, it ought to occur to the disgruntled generalists who attempt to starve out the specialist that their antagonism is unwise and suicidal.

FORMOSA.

THE improvement in the sanitary condition on the island of Formosa since its cession to Japan as a result of its war with China in 1894-1895, is almost as great as that in the island of Cuba under the administration of Gen. Wood and which bids fair to take place in the Philippines in the near future. The number of natives on the island of Formosa in 1899 was 2,729,041, of which 100,000 were Aborigines and the remainder half-civilized Chinese from the Southern provinces of China. Since the occupation of the island by the Japanese, the sanitary measures adopted by them have greatly modified or wholly eliminated many of the disagreeable features of life on the island. The number of mosquitoes, flies and other noxious insects has greatly decreased. The streets of some of the

cities have been cleansed by drainage systems and a good water supply secured by means of Artesian wells. One result of the improved sanitary conditions and the attention paid to education, has been a decrease in the death rate of more than 75 per cent. and a great improvement in the general intelligence of the inhabitants.

BELLEVUE HOSPITAL.

A strong effort is being made by the trustees of Bellevue Hospital seconded by the Fire and Health Departments to obtain an appropriation from the city for new hospital buildings to take the place of the old, which they declare to be unsanitary and so inconvenient as to render a change in the present buildings sufficient to meet the wants of the community impossible. Bellevue Hospital is the oldest in the city and was established when the Dutch held the island in Broad street. During the centuries which have elapsed it has been moved from place to place until the present building was constructed and the name of the hospital changed on account of the beautiful location which it occupied. The trustees say that the hospital is antiquated, unsanitary and a disgrace to the city of New York. The report of the trustees will undoubtedly lead to the erection of an entirely new building of modern design and thoroughly up in construction and convenience to meet the requirements of modern science.

CORRESPONDENCE.

ALCOHOLIC PSYCHOSES.

To the Editors of the Medical Times:

The mental disturbances from alcohol are discussed by Brooks F. Beebe in the *Cincinnati Lancet-Clinic* for May 31. He takes the view that the inebriate is practically insane, and therefore irresponsible. He thinks we should "preach the truth" in regard to the action of alcohol and control the sale of the article; prevent the marrying of alcoholic subjects at almost any hazard, especially those whose intellects are involuntarily paralyzed by this agent, keeping them from propagating their species by confining them in well-regulated institutions, and building up, as far as possible, the damaged brain-cells, before permitting their enlargement. These, it might be thought, are pretty thoroughgoing recommendations, yet the writer is decided in his disapproval of temperance "fanaticism," *i. e.*, the advocacy of total abstinence, which, he insists, is utterly unprofitable and, in fact, no less ridiculous than attempts to prevent the manufacture of alcohol entirely. "What," he asks, "should be done by physicians and statesmen to limit the use and prevent the abuse of this great food and poison?" In the first place, Dr. Beebe, if you really wish to promote these beneficent objects, you must stop calling alcohol "a great food," thereby contradicting your previous description of it as merely "to some degree a food, equal in heat value to one-half that of fat." "Excessive amounts of alcohol act to the great detriment of the user, *as do excessive amounts of other beverages —tea and coffee, or albuminous and other articles of diet*" (italics in the original). Now is this emphasized statement true? *Does* an excessive amount of tea or coffee act injuriously on the user *in the same manner* that an excessive amount of alcohol does? Dr. Beebe certainly cannot think so, for he goes on to present a vivid picture of "the alarming state of affairs" which alcohol is one of the factors in bringing about, through its action in diminishing the families of American-born parents, "which have now become the smallest in any of the civilized countries," and he points to "the alcoholic wrecks—such as can never be resurrected, never can be repaired—that are strewn along the pathway of human life." Again, "alcohol is second only to heredity as the most frequent single independent cause of insanity." And these "irreparable damages are not confined to the transgressors. Their sins are visited unto the third and fourth generations, when, as a rule, those families become extinct." Now will any rational being seriously contend that the very worst effects of any other beverages, or any articles of diet, are for one moment to be compared with such penalties as these? Yet this absurd and misleading parallelism is constantly being advanced by the defenders of "moderate indulgence," as one of their strongest arguments!

"Do not be a fanatic," is the burden of Dr. Beebe's exhortation. "If a man has not sense enough to know that alcohol is doing him harm, let him go to the wall." "Civilization is a vast instrument for the killing of fools." Yes, and also, I suppose, for the development in their innocent offspring of "insanity, epilepsy, neuralgia, and a whole line of nervous diseases; idiocy, imbecility, and criminality." Total abstinence, universally practiced, would destroy the great overwhelming fountain of all these woes, while, in itself, perfectly harmless, to say the least. "Even so," is the reply, "but for this we must wait till the millennium arrives. Meantime, let us preach something practical." Has Dr. Beebe never reflected that precisely this reasoning would apply with equal force to another most prolific source of world-wide disease and misery—the vice of prostitution? Total abstinence—from extramarital intercourse—is here also the only means of eradicating the evil. But we all know that so long as human nature remains what it is, that remedy can never be thoroughly applied. Would Dr. Beebe, therefore, deprecate the preaching of chastity to the young?

G. L. FREEMAN.

CAN ONE BECOME IMMUNE TO THE HONEY BEE'S STING?

AS we are reading so much lately, both in medical and other literature, concerning the honey bee, and the action of its poison or sting, *apis mel*, as an important therapeutic agent, especially in local congestions, it may not be out of the way to consider the question of immunity arising from a constant introduction into the system of the poison which a bee injects by means of its sting into the person accustomed to handle or work amongst them. In other words, can a person so employed become immune to the virus of the honey bee?

I have no "control experiments" to give me data in regard to the matter, but will cite some of my personal experiences with quotations from prominent writers on bee literature, to try and show that one may become immune.

For a number of years, I used to fear and dread the honey bee, or in fact any other sting-bearing insect. A few years ago, becoming interested in the production of honey, and the life and habits of the honey bee, I determined to try, at least, to lay aside my objections to the stinging qualities and pursue the study of these interesting insects as a pastime and recreation, which at times

comes very acceptable to all professional men to keep them from tiring too much of the hum-drum ruts of their lives.

When I first took up apiculture, I was frequently stung. If my veil was improperly adjusted or had the slightest hole in it, a bee was sure to find it out and entering, upon his departure, if such was possible, would leave his gentle reminder in some part of my head. If my gloves did not properly protect me, he would find there a vulnerable spot or if I left my trousers unfastened at the bottom or wore low shoes, the little fellows knew it at once and delighted in finding some particular spot to leave his unfriendly calling card. The part thus stung would at once begin to burn, pain and become swollen, the pain being so acute that it is impossible to describe it, and must be experienced to fully be appreciated.

I noticed, however, as time went on, that the stinging did not bother me so much, neither did the parts swell in proportion. I attributed it to the fact that I was beginning to understand how to handle bees in a more scientific and skillful manner and congratulated myself on the matter.

In the second year of my experience I came into possession of a hive of bees that needed to be transferred to a modern hive, and as it necessitated the entire pulling apart of the original hive, with its 25,000 bees (for that is the usual number in a thrifty hive, colony or skep) I undertook the task with fear and trembling, knowing full well that when once the work was started there would be no possible chance for cessation until they were all safely hived in their new home.

Unquestionably the idea of the number of stings I would receive deterred the matter for several days, as I well knew that with that number of bees flying around the old and young bee ready to avenge the seeming injury done to them, and as mad as "March Hares," it would be next to an impossibility to expect to receive but a few stings.

At length I started to work, received a sting upon my ankle as a warning, it became painful, in a few minutes another "touched" me, another pain. I could not stop, I must work on to the finish now I had started. Sting followed sting in succession, in legs, arms, fingers, neck and face. I imagined what a picture I would present, closed eyes and swollen hands and feet. I worked on, and so did the bees. I could feel the needle-like thrust, but then it did not seem to pain as much, and I at last finished the task. With aching head, slight nausea and vertigo slowly coming on, I left my task with a sigh of relief for what was accomplished, and filled with wonderment as to what my personal appearance would be.

Imagine my astonishment to find merely slightly raised red spots, like little pimples, with the sting in the center, as the result of each and every sting. I must have had something like forty of them on various parts of my body. My clothes were full of them, but they, being so thick, did not allow the stings to penetrate. The dizziness, nausea and headache left me, and "Richard was himself again."

When I again visited my bees, I did not dread the stinging properties any longer, at least, not as much so as formerly, and then, and ever since, I have found that when a bee *does* sting me, the pain is only sharp for an instant, and there is an absence of the after swelling.

Upon reading up authorities on bee matters, I found that whereas the poison of snakes only affect the circulatory system and can be *swallowed* with impunity, the poison of the bee acts with great power on the organs of digestion as well as that of the circulatory, and produces the nausea, vertigo and headache which I experienced.

I have since been stung many more times than I was at that time, and yet none of the symptoms above referred to have been reproduced. Am I not, therefore, immune to the poison of the honey bee, at least to a certain extent?

All authorities on bee culture state the fact, as a crumb of comfort to novices in bee-keeping, that the poison of a bee will produce less and less effect upon their systems.

"Old bee-keepers," it is said, "like Mithridates, appear almost to thrive upon the poison itself."

Huish speaks of "seeing the bald head of Bonner, a celebrated practical apiarist, covered with stings which seemed to produce upon him no unpleasant effect."

Rev. Mr. Kleine advises beginners "to allow themselves to be stung frequently, assuring them that, in two seasons, their systems will become accustomed to the poison."

If a bee is very angry and elevates that portion of his body containing the sting, a tiny drop of some transparent liquid can often be seen on the point of the sting. This liquid is the poison of the bee-sting. Its taste is sharp and pungent. If it gets into the eyes, as often happens, it has a stinging, acrid feeling, as if, as one writer says, "it might be a compound of cayenne pepper, onion juice and horseradish combined." And when you consider these properties and qualities—especially marked and remembered by one who has experienced them—we cannot think it so very strange that such a substance, introduced into the circulation, produces such exquisite pain. In composition the poison has been shown to be similar to that of the viper and scorpion. Whether it contains fornic acid, as the acid obtained from the ants is called, or not, I do not know. I have never heard that any chemist has given an analysis of it. As the bee feeds upon honey and the pollen of plants, it is undoubtedly a vegetable acid, for it is well known that the poison is much more pungent when bees are working in the fields, and accumulating stores largely, than it is when they are at rest in the winter months. As a rule it is during the basswood (American linden) bloom, and buckwheat time that we get those severe stings which draw the blood and show a large white spot around the wound.

An old English apiarist advised "a person who has been stung, to catch another bee as speedily as possible, and make it sting in the same spot." Even an enthusiastic disciple of Francis Huber, of Geneva, might hesitate to venture on such a singular remedy.

Lorenzo Lorrain Langstroth, the "father of American apiculture," says: "Allowing a sting to remain until it had discharged all of its poison, I compelled another bee to insert its sting, as nearly as possible, in the same spot. I used no remedies of any kind, and had the satisfaction, in my zeal for new discoveries, of suffering more from pain and swelling than for years before."

Huber has demonstrated that "bees have an exceedingly acute sense of smell, and that unpleasant odors quickly excite their anger." Long before him, Butler stated "that their smelling is excellent, wherebye, when they fly alofe in the air, they will quickly perceive anything under them they like, even though it be covered."

They have a special dislike to those whose habits are not neat, and who bear about them a perfume not in the least resembling

"Sabean odors
"From the spicy shores of Araby the blest."

Strong perfumes, however pleasant to us, are disagreeable to bees; and Aristotle observes, that they will sting those scented with them. Indeed, I have known persons ignorant of this fact to be severely treated by bees.

On the other hand, some persons, however cleanly, are assaulted by bees as soon as they approach their hives. It is related of a distinguished Apiarist that, after a severe attack of fever, he was never able to be on good terms with his bees. That they can readily perceive the slightest differences in smell, is apparent from the fact that any number of bees, fed from a common vessel, will be gentle towards each other, while they will assail the first strange bee that alights on the feeder.

To show the virulency of the poison let me quote the following from the writings of an old expert apiarist: "I have known of a horse, which happening to be loose in a bee yard, was attacked by a few bees. In trying to defend himself against them by kicking and rolling he upset one hive and then another, the tens of thousands of bees assailed him, and the poor animal was stung to death before his owner could come to the rescue. I was informed by an eye witness that although the carcass remained unburied two days, neither dogs, crows, buzzards, nor any of the usual scavengers of decaying flesh, attempted to feed upon it, so great was the amount of poison instilled into it by the revengeful bees."

The smell of their own poison produces a very irritating effect upon bees. A small portion of it offered to them on a stick will excite their anger.

Old Butler says: "If you are stung, or any one in the company—yea, though a bee had stricken but your clothes, especially in hot weather—you had best be packing as fast as you can, for the other bees, smelling the rank flavor of the poison, will come about you as thick as hail."

In conclusion let me state that I firmly believe that the bee keeper becomes inoculated with the poison of the bee, and usually becomes proof, or at least immune, against it, is no more to be doubted than the fact that vaccination is a preventative against smallpox.

In this day of ours, when we see science making rapid strides forward in her various branches, and particularly so in medical sciences, in the time of inoculations as preventative medicine, Pasteur, Koch and others with their serum for hydrophobia, phthisis, diphtheria, etc., would it be surprising if we should hear of the discovery of the use of the virus of the honey bee for the preventive treatment of some disease. Now, the healing quality of the venom lies dormant and imprisoned. But who can say how long before science will throw open the doors and deliver it for the benefit of mankind, thus adding a new qualification to this busy and interesting insect.

In this connection it may not be amiss to say to the country physician that the study of the honey bee and the action of its sting may not only be a source of great pleasure but also of profit, as a hive, properly cared for, will produce from fifty to one hundred pounds of honey. There is no expense required, but simply care and a knowledge of the habits of the bee.

HENRY F. PARKER, M.D.

Aug. 28, 1902.

—The violet rays of electric light as a substitute for cocaine in local anesthesia are used by Professor Minin, the Russian surgeon, who claims for them an antiseptic property also.

RETROSPECTIVE THERAPEUTICS.

The Abortive Treatment of Carbuncle by Subcutaneous Disinfection.—A. Bidder (*D. med. Woch.*, Nos. 18 and 19, pp. 320 and 338, May 1-8, 1902), has employed this method of treating carbuncle for a number of years. Some time ago he published the procedure, and since then two surgeons have confirmed his results. He claims that in all cases the infection is aborted, and further operative procedures are unnecessary.

Two-per-cent. carbolic acid solution is employed. The injection is made with an ordinary hypodermic syringe, using a good-sized needle. The needle is entered at an angle of about 45 degrees, and is so placed as to be about midway between the softened area in the centre and the indurated margin. It is carried to the centre of the infection just below the skin. In some cases a fistula leads to the suppurating focus, this marking the centre of the carbuncle. One-half the contents of the syringe is injected, when the needle is withdrawn and again entered on the opposite side in the same manner. The remaining contents of the syringe when thrown into the already distended tissues commonly escape along the track of the previous puncture, or the fistula if one exists.

The injection is usually followed by some pain and a slight increase in the swelling. In a few days the carbuncle shrinks to a small indurated mass, which soon disappears.

A number of case histories are given, which show that there is a true aborting of the infection. The author offers some speculations on the mechanism of the process.

Venereal Disease in China.—According to Rosanoff (*Russky Vratch*, N. 13, 1902), who resides in Mkao, Manchuria, the opinion that syphilis was brought to that part of China by Russians is not correct. Prostitution and syphilis and other genito-urinary diseases are just as much developed in China as they are in Europe. Furthermore, he states that Chinese physicians have a special medicine for gonorrhea and a different one for the treatment of syphilis. A Russian soldier, whom Rosanoff treated for subacute gonorrhea and epididymitis, asked his permission to consult a Chinese doctor. The latter examined him and then gave some brownish-yellow mixture, of which he ordered him to take about half-an-ounce at night for three consecutive days and one dose in a week. After each dose the patient had a feeling of general excitement. The pulse was rapid and tense; the urine contained albumin. A week after the last dose the induration of the epididymis was gone and the result of the examination for gonococci was negative. Rosanoff and his assistant, both healthy, then tried the medicine; it produced the same feeling of excitement; albumin appeared in the urine and the pulse became tense and rapid. He has also seen, though he did not follow them so carefully, cases in which the pills which the Chinese physicians gave for the treatment of syphilis were effective. He promises to send some of the medicine to Russia for analysis.

The Prophylaxis of Gonorrhea. —Van Zeissl (*Jour. Derm. & Gen.-Urin. Dis.*) states the uncertainty and unreliability of the usual methods, such as the use of condom, bathing the male organ after coitus and urination immediately after the act. Injections of bichlorid solution, permanganate of potassium, nitrate of silver, etc., are shown to have serious disadvantages. He has found most satisfactory the method recommended by Frank, the instillation of a few drops of a 20-per-cent. solution of protargol. This is effectual and produces only a slight pricking sensation. He directs immedi-

ately after intercourse the organ to be washed and 3 to 5 drops of a 20-per-cent. protargol-glycerine solution to be instilled. He has never witnessed any disadvantages.

The Salt Pack in Rheumatic Gout. —Mr. Jonathan Hutchinson says, in the *Polyclinic,* that he knows of no remedy so effectual in getting rid of irritation and synovial effusion in connection with rheumatic gout as the salt pack. This consists of flannel soaked in a saturated brine of common salt, which is wrapped around the affected joint, covered with oiled silk and a bandage, and kept on the whole night. It should be applied every night until the cure is effected.

Alcoholism and Hypnosis. —Recently, in Russia, Knery and Sinani made a number of interesting attempts to treat alcoholism by hypnosis, with favorable results, and they believe such treatment superior to medication. Sinani treated sixty-two patients at a dispensary, giving them suggestion every day, resulting in the complete recovery of sixteen who did not relapse to drink in from six months to ten years. Bechterew has employed hypnotism in the treatment of chronic alcoholism for ten years, but in spite of the good results he does not consider suggestion alone sufficient for a permanent cure, as alcoholism is not a disease of the will-power alone, but often depends upon organic changes. For this reason he combines hypnosis with hydrotherapy, bromides, codeine, heart tonics, strychnine, etc. Abramowitz is enthusiastic over hypnotic treatment, having nine complete cures out of the sixteen patients treated. He believes the combination with drugs gives no better results than hypnosis alone. Wiasemsky thinks this treatment the best for alcoholism. He has found that these patients are easily hypnotized, and also that there is a difference between those who wished to be cured and those who were urged by relatives and friends to undergo the treatment. There never was a bad effect from the withdrawal of stimulants, the tremor and general weakness disappearing quickly under suggestion. The observation of the cured cases extends over a period of ten years.

The Use of Brewer's Yeast in Therapeutics. —Durand (*Lyon Médical,* 1902) reviews the history of the employment of this agent, and its indications, and mode of administration. It is useful in furunculosis and all suppurative inflammations of the skin of internal origin, and it acts as a powerful internal antiseptic. In gastro-intestinal disturbance of infectious origin it attenuates the virulence of the secretions, and locally it may be used as an antiseptic lotion for vaginal discharges, suppurative tonsillitis, burns, etc. The yeast is best given desiccated in which state it will keep its action for an indefinite time. It may then be suspended in beef-tea or in a gaseous fluid, or compressed, or given in cachets. Three teaspoonfuls a day form a medium dose. It is as well to test the fermenting power of the yeast before using, by suspending it in a solution of sugar for a short time at a temperature of about 30° C.

Prophylaxis in Gynecology.—Recognizing that the great advance in gynecology has been mainly in operative technic, and particularly of the abdominal cavity, Snow (*Brit. Gynecological Jour.,* Feb., 1902) desires a consideration of the possibility of preventing the diseases of women by ordinary care and attention to the laws of health.

He calls attention to three main causes: Corsets, habitual constipation, too frequent child-bearing.

In connection with the first he says: "There is strong reason to regard the large, multiple, many-shaped uterine myomata, so unfortunately prevalent among civilized women, as due to this source, and this alone."

"Cancer, as well as uterine flexion and displacements, is a result of the corset, particularly mammary cancer."

Postural Treatment of Hemorrhoids.—G. Oeder claims that he is able to cure hemorrhoids by postural treatment alone. The principle involved is that the swellings are due to the weight of the blood column, the venous blood traversing the great distance from the rectum to the heart unsupported by valves. So that, if the anus is raised to a position above the height of the heart, the force of gravity is then towards the heart, the congestion and pain are reduced.

The pelvis is raised by means of pillows until it is about 10 inches above the heart. During an acute attack, one or two nights' rest in this position is often all that is necessary, and he says that even chronic cases can be cured by prolonged use of this posture during the sleeping hours.

Sanatoria for Consumptives.—The announcement of the prizes offered by King Edward for the best plans for a complete sanatorium for consumptives has been followed by a good deal of discussion. Dr. James Arthur Gibson, through the *Westminster Review,* has made some criticisms and suggestions which have a bearing on the same problem in this country. He opposes the erection of a large sanatorium, which seems to be conditioned by the requirement that the plans shall provide for a building capable of accommodating 100 patients, and advocates rather the erection of a number of small sanatoria, and outlines a comprehensive plan with that end in view. Contrary to prevalent opinion, he declares that it is not advisable to build lying-out verandas. "They are bad for patients who are recovering," he says, "since they conduce to loitering and lazy habits, while they are also bad for those who are more ill, since they lead to overcrowding, talking, and excitement. Nor are recreation rooms such as billiard rooms and other like superfluities, to be tolerated, for they but keep the patients indoors when they should be out, and besides, these meeting-places, with their excitements and overexertions, are most detrimental to progress in cure. Even chess and card games are exhausting. I have lived through it all and know just exactly what these excitements mean for the consumptive. Nor is it advisable that there should be a farm in connection with the sanatorium. The doctor in charge will have enough on his shoulders without that. A garden, however, which should provide green vegetables during as great a part of the year as possible, would be an advantage. He opposes as well the plan to provide in these public sanatoria for well-to-do patients, believing that it would lead to troublesome complications.

Acetozone in the Treatment of Typhoid Fever.—E. Wasdin (*Therap. Gazette,* Vol. XXVI., No. 5, p. 289, May 15, 1902) reports twenty-five cases of typhoid fever treated with this new intestinal antiseptic. The duration of the disease was reduced in a large number of them to fourteen days, the time being reckoned from the development of definite symptoms. This series of cases was remarkably free from bowel complications, and where they were present, in those admitted after the disorder had persisted for some time, they quickly disappeared. There were no deaths and but few terminal expressions of the infection.

The treatment pursued in all the cases was so thoroughly move the bowels by grain doses of calomel combined with aloin and guaiacol every two hours until the

intestinal canal was emptied. The patient was then given from 1,500 to 2,000 cubic centimeters of a solution of acetozone that had been prepared twenty-four hours before. The diet was restricted to milk to which was added acetozone. In addition the same substance was atomized and inhaled. In some cases the acetozone was given in capsule, five grains in sugar of milk, three times daily.

The first effect of the acetozone is an increased secretion of the kidneys. This is soon followed by a pronounced decrease of the odor of the stools and a marked diminution of the micro-organisms found in the intestinal dejecta. As a result of his observations, the writer concludes that acetozone is an efficient germicide that is innocuous to man and is readily eliminated. In typhoid it obviates the intestinal infection and toxemia, preventing the development of complications and shortening the duration of the disease.

Treatment of Sciatica.—Brieger (*Berl. Klin. Woch.; Med. Standard*) has succeeded in curing all but one case out of twenty-four by the application of the Scottish douche, hot baths and massage. The bath is given in a large tub with the water at a temperature of 100.5° F. The heat relaxes the muscles, soothes the aching parts and permits of many movements which would otherwise be painful. Massage after the bath is also borne much better. It hastens the cure. One case was cured in forty-six days after having suffered with the sciatica for one year. Another case was cured in eleven weeks after an attack lasting eighteen months and a third in thirteen days after two years of suffering. This last case, a very corpulent lady, aged 54, received six Scottish douches and two hot baths of ten minutes each, at 98.5° F. and then two at 104° F. for fifteen minutes. When she was discharged she could walk erect without support and there was hardly any pain except when an attempt was made to stretch the knee when the thigh was flexed. The ambulatory cases receive a Scottish douche and massage two or four times weekly. All his cases were very severe and all previous attempts at treatment had failed utterly. He believes that the one case which resisted all forms of treatment instituted by him confirms Winternitz's statement that such refractory cases are always accompanied by some complication of the sciatica.

Hyoscine in the Treatment of Narcomania.—Dr. Hobart A. Hare states (*Med. News*, June 7, 1902) that, since the publication in the *Therapeutic Gazette* for February, 1902, of Dr. Lott's paper on the above subject, he has tried the plan in six cases with extraordinary results from the following points of view: "First, the patients can take massive doses for days at a time, as much as ¼ grain each day hypodermatically, with no evil effects on any vital function. Second, they suffer very slightly, if at all, from the immediate withdrawal of the morphine, and third, and more surprising, the desire for the drug is largely, if not entirely, dissipated after a few days.

"Those of us who have seen the suffering of morphine-habitués suddenly deprived of the drug cannot fail to be impressed with the extraordinary ease with which morphine can be withdrawn from such patients when they are receiving hyoscine. The last case that I have mentioned, in which the patient was not only a morphine-habitué, but also an alcohol-habitué, seems to me of extraordinary interest. As I said at the beginning of this note it seems to me very extraordinary that a patient can take such massive doses of hyoscine without developing serious symptoms, that he can be deprived of such large quantities of morphine without passing into collapse, and that all alcohol and morphine can be withdrawn simultaneously and at once without the development of evil symptoms. Dr. Lott certainly deserves a very large amount of credit for his courage in carrying out this plan of treatment, which has given me such good results in a few cases that I shall have no hesitation in applying it in others. While these few cases do not justify me in reporting the method as universally applicable, the remarkable results so far obtained and the importance of this subject seem to justify this preliminary contribution to the same, since Dr. Lott's statement that the treatment can be used in drug habits other than the morphine habit seems to be endorsed by my own results."

RETROSPECTIVE DIETETICS.

Cocoa.—Wallian (*Diet. & Hygièn. Gaz.*) says that cocoa is perhaps less frequently adulterated than either tea or coffee, except that sugar and starch or arrowroot are openly added as modifiers of the prepared product. But the chief fault with the popular brands of cocoa is that they contain raw, unutilized, because practically insoluble, starch and non-emulsified fat. If the starch were made available the large percentage of fat would be much less if not entirely unobjectionable. Cacao-butter is not very difficult of digestion *per se*, and most nervous people consume too little fat.

The cacao bean contains, according to the most reliable analyses, nearly 30 per cent. of proteid matter, 23 per cent. of carbohydrates, chiefly starch, and nearly 50 per cent. of fat, with only 3 per cent. of theobromin.

It is, therefore, chemically more nutritious, pound for pound, than beef or bread. In comparison with tea and coffee its narcotic effects are very mild.

If the chemists and the manufacturers will combine in an effort to make its fat, proteids and carbohydrates soluble, digestible, assimilable, and at the same time grateful to the majority of palates, they will have accomplished a great feat in dietetics.

Cocoa should be made to displace tea and coffee very generally as a popular table beverage.

Pasteurized Milk.—Pasteurized milk is milk which has been heated for from ten to twenty minutes at a temperature of from 80° to 65° C. and has then been rapidly cooled to 10° C. Such milk possesses several advantages which are stated by J. Odery Symes, M.D., D.P.H. (*Hospital*), as follows: Its taste is not altered, chemical analysis shows that its albuminous value is not lessened; but although the temperature to which it is raised is sufficient to destroy all pathogenic bacilli, it does not destroy the majority of spore-bearing saprophytic organisms present. Pasteurized milk does not cause scurvy, and this is probably due to the fact that it is not stored for several days like sterilized milk, and consequently does not develop those minor putrefactive changes which are believed to be the exciting cause of this disease. Young children readily digest pasteurized milk, even when other artificially prepared products are rejected; they rapidly put on weight, and the constipation which so often results from the use of the boiled article is not noted. Our conclusions briefly summarized may be stated thus: For the feeding of young children or adults, pasteurized milk is superior to any other preparation, and where this cannot be obtained it is advisable to use milk which has been kept at the boiling point for a few minutes only. The prolonged use of sterilized, humanized, or condensed milk is to be avoided, as these are of lessened nutritive value, and have been shown to be capable of exciting the not uncommon condition of infantile scurvy.

Shaken Rennet Milk.—Lauptim (*Jahrb. f. Kinderheilk*) gives details of twenty-four cases fed with shaken rennet milk in dyspeptic infants. The rennet used is known as "Peguin," and is combined with milk sugar. A little of this is added to each bottle of milk, and produces coagulation; the bottle is then shaken till the curd is reduced to fine flocculi, resembling the condition of casein coagulated from human milk. These infants, owing to improper feeding, had got into a state of chronic dyspepsia, and the stomach was so irritable as totally to reject milk; there were dyspeptic stools, and the children were constantly crying from hunger and colic, and were wasting. Almost as soon as this new food was given, the vomiting ceased and sleep returned, while the stools gradually improved and the weight began to increase. The quantity given was 3 to 4 ounces every three or three and a half hours. As a rule the milk should be given undiluted, though occasionally a little boiled water may be added. In the ordinary management of infants with dyspepsia, after a few days of diet of albumen water or meal foods, the transition to milk is the difficulty. If this be much diluted it may be retained, but its nutritive value is low, and its bulk taxes the powers of the weak intestinal muscles. The advantage of the shaken rennet milk is that the general nutrition improves at once. The mechanically disintegrated casein is not rejected by the stomach, and is easily acted on by the digestive juices and assimilated. Its bulk is small, and gives the digestive tube comparatively easy work, and allows intervals for rest. After a time, intestinal digestion recovers its power, and when this has been fully established for some time ordinary milk may be resumed. The Rennet milk may usually be taken for a month or two altogether.

Disease from Beans.—The latest article of diet to have its character impeached, says a writer in *Health*, is the common bean, which is said to be the favorite food in some communities in our republic. Dr. Cipriani accuses the bean, which has long been thought so harmless and nourishing, of causing a malady by no means infrequent, to which he gives the name of fabismus. According to him, it is not the beans themselves which are poisonous, but microbes which exist in the interior of the bean. In that case we have to deal with an infectious disease.

Fabismus can be contracted in two ways: Through the respiratory apparatus and through the digestive apparatus. In the first case the malady appears on inhaling the emanations from bean flowers. In the other case it is produced by swallowing the beans themselves. The emanations from the flowers received in passing a beanfield are not always poisonous, that depending upon the season and the condition of the persons who inhale them.

Fabismus appears especially when one has eaten raw beans; but even dried and cooked beans may bring on the malady. If some of the beans which have made a person ill are given to a guinea-pig, the animal also becomes ill. Of course, if the cooked beans have been exposed to a heat sufficient to kill the microbes, the danger is eliminated.

The progress of the malady is rapid. In the case of respiratory fabismus it culminates at the end of from two to five hours in a violent chill, followed by a fever, a little headache, insomnia, and prostration. In some cases the fever is so high that the patient is obliged to go to bed. Finally—but happily very rarely—the fever brings on a comatose state, which, in twenty-four hours, ends in death. In ordinary cases the fever disappears at the end of five days, after abundant sweats.

In digestive fabismus the progress of the malady is the same, with this difference, that the first chill is accompanied by vomiting and violent pain in the stomach. The persons attacked often turn intensely yellow. As in the preceding case, the illness may end in death, but that is the exception. In general the symptoms disappear one after another in about four days. In both cases the spleen is enlarged, and the sick people are very anemic.

Dr. Cipriani's remedies for this bean disease are calomel, antipyrine, and especially chinosol.

The Bill of Fare for Consumptives.—Robin (*Bull. Gén. de Ther.*) advises a large glass of milk on waking, with a dash of vichy water. Breakfast at 8, with a piece of fat steak or a cutlet, two soft eggs, a little toast, oatmeal with abundance of cream, but little sugar, and two glasses of milk or a cup of coffee. At 9, cod-liver oil and a little milk or a glass of milk with the yolk of an egg. At 10 a large cup of beef tea made from raw meat, after which the patient lies down until noon. Dinner at 12:30, with fish, rice, chicken, cauliflower and a slice of well-buttered bread, one or two glasses of milk and baked apples and cream. At 2, cod-liver oil or milk with the yolk of an egg. At 4, sandwich of scraped raw beef, and rest or sleep till 6, when the supper can consist of beef, fish, mutton or raw beef, with spinach cooked in cream, and blanc mange or vanilla ice cream. At 8, cod-liver oil or milk and yolk, and at 9 or 10, a glass of iced or very hot milk or a cup of good beef tea. At night, if wakeful, a glass of milk at 1 or 2. This régime is tolerated by nearly all patients and has given the best results in his extensive experience. Milk is the constant beverage.

Diabetic Diet List.—The following strict diet is recommended by N. S. Davis (*Jour. A. M. A.*): Breakfast—Tea or coffee without sugar or cream, one egg and bacon, and two or three slices of nut bread with butter. Dinner—Bouillon or broth; beef, mutton or chicken, spinach, asparagus or wax beans; salad of lettuce or tomatoes with cheese; black coffee without sugar. Supper—Tea or coffee without sugar or cream, meat, fish or mushrooms; a salad of tomatoes, lettuce or chicory; two or three slices of nut bread. At bedtime, or in the evening, an egg lemonade made with saccharin can be given. Use as much butter as possible on bread and oil on salads; eat fat meats by preference.

Disinfection of Hands with Alcohol. R. Schaeffer (*Berl. klin. Woch.*, Nos. 9 and 10, 1902) regards the conclusions drawn by Paul, Sarwey, Kronig and others, that no means or methods exist by which the hands may be rendered even moderately free from microorganisms, as too sweeping, and inquires carefully into the question from a practical point of view. One may attempt to disinfect hands by (1) mechanical means, and (2) chemical solutions. The first method is absolutely untrustworthy. In his investigations with chemicals he classifies the various solutions according to the number of colonies which appear on an agar plate which had been inoculated with the scraping of the skin by a sterile toothpick. In all cases he speaks of "poverty of germs," and not "absence of germs." In the case of disinfection with alcohol he washes his hands for five minutes vigorously in very hot water, with soft soap and a clean nail-brush. The nails are then carefully cleansed with a suitable instrument, and the hands energetically rubbed with a sterile towel. After this he scrubs his hands for three or five minutes in alcohol, changing it once or twice. His experiments give very much better results with this method than with disinfection by other means. * * * Inquiring into the method of

action of the alcohol, he finds that its bactericidal properties are not marked, as demonstrated by brushing the hands infected with staphylococcus in 150 grammes of alcohol, after washing in hot water for one minute, and after the lapse of twelve minutes testing the filtrate of the alcohol on agar plates. A second method of action depends on the hardening properties of alcohol, while a third rests on its power of dissolving fats and epithelium. Schaeffer states that the chief value of alcohol as a disinfectant for the hands is imparted by mechanical cleansing and not by a chemical change. He believes it to be the best method known up to the present time.

Surgical Hints. (*Intern. Jour. of Surgery.*)—Never allow a patient with a fractured leg or thigh to lie in a bed which sinks in the middle. This can be remedied by passing boards under the mattress.

In patients suffering from the effects of violent blows upon the jaws never remove a tooth just because it is loosened. Its tendency is to become again firmly attached, and hence it is always best to wait.

To use a styptic in a case of external hemorrhage is to acknowledge one's inability to properly bandage or compress, or pick up a vessel. It should always be a procedure of last resort, only permissible in some emergency.

When bandaging a limb where there may be a possibility of swelling it is well to remember that the reverse spiral is more elastic and will stretch more than the simple spiral, and that the figure of 8 bandage is more elastic still.

In fractured limbs occurring in children it is always best to employ a plaster of paris bandage rather than some other form of apparatus; as they cannot realize the necessity for immobilization, they will nearly always manage to get rid of anything else.

Never allow an ice bag to remain for many hours upon the skin without careful inspection. Very severe frostbites may occur in patients, particularly when their circulation is impaired, through the agency of such intense cold applied continuously, as is so often done in pelvic and appendicular inflammations and in strangulated hernia.

Effects of Tight Diapers.—Dr. A. C. Cotton (Amer Pediatric Soc.) said that the diapers ordinarily used were unhygienic. They should be made of cheesecloth, applied loosely and well padded with absorbent cotton. The cotton should be destroyed as soon as it was soiled. Dr. Cotton showed an infant pelvis, demonstrating the fact that it was composed chiefly of cartilage and extremely flexible. Steady general compression on such a structure would tend to retard its growth and development. Radiographs were shown illustrating the effects of tight binders and diapers. Dr. Cotton said that the tendency of tight diapers to cause a bowing of the femur had been a recognized fact for some time; he also thought that tight diapers might be responsible for a certain percentage of the justo-minor pelves, so frequently found.

New Ideas in Hospital Construction have been carried out in the building for the clinic maintained by St. Bartholomew Church, opened recently for inspection. The window and exterior door frames are covered, according to *American Medicine*, with copper, the sash and interior doors are covered with kalsomined iron, the interior door frames are of cast iron, and the shelving, table tops, etc., are of stone or steel held on iron supports, so that no woodwork appears. The building above the basement is marked by the entire absence of any angles or projections. All intersections of all surfaces meet with a uniform curve; this has been carrier out not only in the walls, ceilings, and floors, but also on the stairs, shelf and table standards, window recesses, etc., throughout. The sash and doors are so constructed that there are no mouldings or broken surfaces between the frames and glass or panels. The surface of the frame meets the glass with a feather edge, and the corners of the sash and door panels are also rounded, so there may be no lodging place for the collection of dirt or foreign matter. The angles or corners above the wainscot line are run in plaster. All furniture used in the building is of steel of unusually exact workmanship after special designs, and finished in white enamel.

THE CLINIQUE.

DIGESTIVE LESION IN TYPHOID FEVER AND CASES ILLUSTRATING OTHER COMPLICATIONS.

I WILL point out the lesions of the digestive system that occur in typhoid fever. In the beginning of the disease there is usually a loss of appetite and a marked thirst. The lips in the early stages are not necessarily chapped, but in cases of severe onset they become dry and covered with scales of epithelium mixed, if especial attention is not paid to the cleanliness of the mouth, with food and forming sordes. The tongue in the first few days of the disease is in no way typical. It is seen, when protruded, to be in a condition of tremor. The coating with which it is covered extends only over the dorsum, leaving the sides and tip free. As the disease progresses the tongue becomes dry or brown and has transverse fissures running across it.

This man illustrates well the condition of the mouth of typhoid patients. When he was admitted his chest was normal. He had, however, a raised temperature, general body pains, headache, and diarrhea. The temperature when he was admitted stood at 103.2° F., with a pulse of 92, and a respiration rate of 22. His heart showed no signs of disease. The spleen showed a distinct enlargement. A condition in this patient which is of extreme interest but has probably no bearing on his present illness, is the occurrence of subcutaneous fibrous nodules around the joints, especially in the vicinity of the wrist and knee. This is a condition which is found occasionally in cases of rheumatism and this was probably their origin in this case, for the man gives a history of a rheumatic attack. His teeth, you notice, are black at their junction with the gums. This is due probably to the poisoning brought about by his trade, that of painter. The case is, from the symptoms which we have named, not necessarily one of typhoid fever, but it does illustrate aptly that condition which we call the typhoid state and as such he has the condition of his mouth just such as we see in typhoid fever. The indications are on a whole against a diagnosis of typhoid fever. The blood, for example, in typhoid is very characteristic, aiding us greatly in our diagnosis. In the majority of the infectious fevers the blood count as a rule shows an enormous increase in the number of leucocytes. In typhoid fever, on the contrary, the blood count shows about six thousand leucocytes the first two weeks and a decrease to four or even two thousand during the third and fourth week. With the occurrence of complications, however, there is usually some leucocytosis, especially is this true in case of perforation or pneumonia. This man presents from the onset many of the symptoms of enteric fever, but most of the indications are against such a diagnosis.

To begin with, his age is sixty-five, a rather unusual age at which to contract the disease. Moreover, there is no Widal reaction and the leucocytes number one hundred and fifty thousand. Such an intense leucocytosis as this is seldom found, except in leukemia. Judging from his blood count there must be an intense infection of some kind, but I have as yet been unable to ascertain what it is. Besides the symptoms which I have enumerated all the signs in this case are negative as to typhoid. He has not the sore throat, which is rather common in typhoid fever. With sore throat we find occasionally associated tonsillitis, but this condition is rather uncommon. Going still further down in the alimentary tract we frequently find the esophagus the seat of ulceration, which may become so great as to cause a stricture. Vomiting is not common except in children. The more sudden the mode of onset the more abrupt, as a rule, will be the gastric conditions.

I spoke to you last week of the presence of diarrhea in typhoid fever. However common this may be outside my own experience, I know that it is rather an uncommon condition in this hospital. It is a rule in many medical institutions to purge the typhoid fever patient immediately upon admission. Here we do not give purgatives unless the condition of the tongue seems strongly to urge such a measure. In cases where there has been on admission no diarrhea and a purge has been given it is noticed that frequently the bowels will be loose during the whole course of the disease. The reason for this is that the drug administered has probably produced a catarrhal condition of the bowels. The diarrhea of typhoid fever may be due to the ulceration which is affecting the intestines, but the more likely cause is the catarrhal condition of the mucous membrane of the bowels. The stools are of a characteristic yellowish appearance and of a watery consistency suggesting a comparison with pea soup. They have an offensive odor and an alkaline reaction. Macroscopically, we may detect fragments of undigested food and grayish fragments from one half to one inch in length, which are the necrotic crusts of Peyer's patches. Microscopically they have been found to contain blood corpuscles, epithelial *débris*, crystals of triple phosphates, and in the later stages of the disease, a great number of bacilli.

Another rather common symptom is tympanites. It is due either to a lack of tone of the bowels or to the infiltration of the intestinal coats. It occurs most commonly in cases where diarrhea is a marked symptom, although the latter may not even be present. It is a rather dangerous symptom, since the bowel is subjected to a pressure and consequent distention which greatly increases the danger of perforation. We should therefore, get rid of it as soon as we can.

A condition which we must be constantly on the lookout for is the presence of abdominal pains. It is a condition which I fear more than anything else, for although it may bring about no serious results, I always keep in mind some of the complications which it may indicate. It occurs in three-fifths of all our cases. It may be due to a persistent diarrhea, to constipation, or to the onset of serious complications, and it is to this latter point to which we pay the greatest attention in diarrhea. The dangerous conditions included are first, perforation; second, hemorrhage (although this may be unaccompanied by pain); and third, an inflammatory condition of the gall bladder or liver. Perforation occurs in about 3 per cent. of all our cases, and is a condition with which, despite our now successful method of treating typhoid fever, we have made no progress. It is almost invariably a fatal accident and is a complication most to be dreaded. Its advent is associated with the sudden occurrence of acute pain in the abdomen, followed by the symptoms of collapse. The abdominal muscles become hard and extremely tender to the touch, and later tympanitis may set in. It occurs usually at the end of the second week, but it may take place according to the length of the disease at any time between the first and the sixteenth weeek. It does not occur necessarily at the seat of a large ulcer with a tremendous slough, but a small ulcer with a deep slough is very frequently the site of perforation. It occurs most commonly in the ileum and in the cecal valve. The colon is rarely the place of occurrence.

This next patient, a boy, developed two days ago signs which were so decidedly suggestive of perforation that we were prepared at any moment to operate. There was a sudden, sharp agonizing pain located in the right hypochondriac region, rather high. Physical examination disclosed to us a marked spasm of the muscle on this side in contradistinction to the relaxed condition of the other side. With the onset of the pain there was a fall in the temperature which was soon followed by a rise.

In this case we did not find the so-called preperforative symptoms. In the perforative condition the abdomen may not be changed, but there is a rapid quickening pulse and a condition of lowered respiration on the painful side. When perforation does take place air enters the peritoneal cavity and consequently the liver drops back, giving us over the normally dull area a tympanitic percussion note. In this boy the area of liver dulness is still intact.

He entered the hospital after two weeks' illness with the characteristic rose spots (which have now faded) and an enlarged spleen. Examination of his blood showed a positive Widal reaction and a fall in the number of leucocytes. Two nights ago, he developed the acute pain I have mentioned, drawing his legs up and manifesting extreme tenderness to touch. The pain seemed to be rather high up for perforation and the symptoms were much more distressing than is usually the case in such an accident. Since there has been no further development of symptoms it is my opinion now that what really occurred was an inflammation of the gall bladder. The pain was directly over the location of this organ.

The next case is both a medical and a surgical curiosity. It illustrates well the manner in which typhoid fever may cause trouble in entirely unsuspected quarters. The patient was admitted to the hospital on the tenth of September. She was delivered of a child four weeks before and had made apparently a good convalettment and syrining the wound was sewed up. There well since the delivery. Puerperal septicemia was naturally suspected. On admission her temperature was 104° F., the spleen was enlarged, there was a rather suggestive Widal reaction, the liver was enlarged, rose spots were present, and the diazo reaction was positive. She had, in other words, all the typical symptoms of typhoid fever. Since she has been here her temperature showed some irregularity, but the symptoms did not point to continued ulceration of the bowel. Consequently I suspected some intercurrent affection. An examination was therefore made and a large boggy mass was discovered in the pelvis. I referred the case to the surgical department. The mass proved to be too large to remove through the vagina and an abdominal in-

cision had to be made. A large dermoid cyst was removed. It contained hairs, teeth, and nails. After curettement and syringing the wound was sewed up. There was, following the operation, a fall of temperature. It is a curious fact that during the whole time before the operation, although the vagina showed some signs of suppuration and there was a high fever, there was no leucocytosis. From the cyst pure culture of the typhoid bacillus were obtained. The operation brought on in four or five days a true relapse. This subsided, and at the present time the patient is quite well.

Hemorrhage in typhoid fever due to the separation of the necrotic sloughs is a complication, the significance of which is not fully appreciated. It is a very serious accident, death following in about 40 per cent. of cases. I have the record of an Italian, who had an attack of typhoid fever which was not unusually severe, and who suddenly developed on the twenty-second day of the disease a sudden fall of temperature to 95°F. His face became blanched and he showed all the signs of collapse. The fall of temperature was followed by a rise. In twenty-four hours blood clots were found in the stools.

Hemorrhage occurs in four to seven per cent. of cases. It appears usually in the latter part of the second and third week, when ulceration and sloughing is in full progress. The amount of blood may be very small or very large. I have seen cases in which several pints of blood have been discharged from the bowels. As it appears in the stools the blood is clotted and dark. If it appears soon after the hemorrhage, however, it may be fluid and of a bright red color. Intestinal hemorrhage, even if almost insignificant, is a very grave symptom. But recovery is possible even if the hemorrhage be frequent and of a large caliber.

The next case is that of a young man, who was a patient in this hospital last November, aptly illustrates the importance of blood examination in typhoid fever. In his case it was the blood count alone that placed us upon our guard. He had an apparently mild attack of typhoid fever. He developed great pains in the precordium. Auscultation disclosed a faint systolic murmur. The blood count showed a marked leucocytosis. As cardiac complications are very rare in typhoid fever, his case particularly interested us. The signs of typhoid were distinct enough, the spleen being enlarged and rose spots present. We watched the symptoms very closely. The murmur which we had noticed at the apex increased. There was palpitation and precordial distress. Since that time compensation seems to have taken place. A diffuse pulsation may be seen. There is the systolic murmur, and in fact we have all the signs forming the tripod upon which rests the diagnosis of mitral stenosis. Although it is rather unusual to have cardiac complication in typhoid fever, still the gravest conditions may sometimes occur.

Inglis opposes, in a recent paper, the diet of typhoid fever as commonly consisting of milk. He states that he is not afraid of the idea of starvation if the patient drinks plenty of pure water. He states as follows:

"The ideal diet for typhoid fever is pure water in abundance. This will keep the excretions by skin, lungs, kidneys and liver up to their best and our typhoid patients need to keep all means of elimination of poison in fullest activity, providing it be not a prostrating activity. The action of kidneys, liver and skin induced by superabundant water, is never prostrating. This cannot be said of action induced by drups. It is not enough to give the patient as much water as he may happen to crave, we must use our scientific imagination to picture the very large quantity of water which goes out by the lungs; notice how quickly the moistened tongue becomes parched; we must realize the evaporation from the skin; consider the diarrhea and the urinary needs; then put in water enough to keep all these in full activity."

Inglis further states:

"People have imbibed enough of current medical opinion to make it difficult to stop our present dangerous overfeeding. Even were the attending physician convinced of the safety of the pure water diet, the friends will insist that the patient's strength must be kept up. In such cases any of the best advertised meat-juice foods (so-called) can be utilized. They contain little real food value, and are, fortunately, mostly absorbed in the stomach, and so leave little or no detritus to go through the bowels. There comes a time in the course of the fever when the patient's appetite returns. This is always a difficult period. Pressure by both the patient and the patient's friends is very great. It is hard to resist the cry for all kinds of food and lots of it, yet there is probably no man who reads this who has not had the bitter experience of seeing his patient quickly relapse after some newly-tried indulgence in food. It seems to me that the best rule to follow is this: Give such foods as are most completely digested and absorbed in the stomach; keep steadily in mind that while the stomach may be acting but poorly, the intestinal condition is far worse. Still we should send down from the stomach as little detritus as possible. A tender lamb chop or a poached egg is safer than a tumbler of milk; safer all the way through.

"It has been my fortune to advocate the principles I now contend for, in consultation at the bedside. The doctor says: 'Yes, doctor, I believe you are right in theory; I can see that the stomach is practically unable to digest food, that the intestinal mucous membrane not only has long since lost its normal function but is apt to be damaged by irritant substances and putrefying ones; you may be right that the fire of the fever would be less intense and would burn down sooner if we didn't keep piling on fuel, but just look at the patient! See how thin he is! How weak his pulse! Some time I'd like to discuss your theory with you, but I guess this time I will go on feeding.

"It takes nerve to take an infant suffering from cholera infantum, take it away from the mother's breast, cut off cow's milk, or food of any kind, and keep the baby on sterilized water and Epsom salts until the nearest approach possible to intestinal asepsis is secured, but, fortunately, the profession has learned that degree of courage.

"I am well aware of the limitations of my own personal experience in typhoid fever, but at least I have seen this. I have seen patients whose fever kept springing up after the bath like a steel spring, patients whose brains were so poisoned that delirium was deepening into coma, come out into moderate fever and a clear head within forty-eight hours after the forced feeding was stopped and a water diet instituted."

—A box of mignonette and geraniums in blossom in a window are as effectual in barring the entrance of a plague of flies as a wire screen, and far pleasanter to the eye, says *Dental Summary*. Flies have a decided aversion to the oil of bay leaves, and a few drops in a dish placed near the window will prevent their unwelcome visits.

MISCELLANY.

—Nitro-glycerine has a wonderful effect in post-partum hemorrhage, says the *Medical Summary.*

—Huchard concludes that chloroform, well prepared and prudently administered, never causes death.

—One-twentieth of a grain of apomorphia, hypodermically, sobered a "crazy drunken" man in a few minutes.

—The Russian law forbids marriage after the eightieth year, and in that country one may not wed more than five times.

—A hundred thousand dollars for the University of Pennsylvania Medical Laboratories have been donated anonymously.

—The Third International Congress of Medical Examiners for Insurance Companies will be held in Paris in May, 1903.

—Heat relieves the pain of inflammation, but increases that of suppuration. This is a valuble diagnostic aid in appendicitis.

—According to statistics, the number of female physicians throughout the world is about 8,000, two-thirds of whom live in America.

—Psychic life (says Professor Wundt) is not the product of the bodily organism, but the bodily organism is rather a psychic creation.

—The incumbent of the chair of Forensic Medicine and Toxicology at Berne, Dr. K. Emmert, recently celebrated his ninetieth birthday.

—The authorities of Yale College have announced that hereafter the course in the Yale Medical School can be made in three years instead of four.

—A law which has become operative in France, requires that a child must be vaccinated during its first year, revaccinated at the age of 11, and again at 21.

—Statistics go to prove that people usually live longer in islands and on small peninsulas than on continents. Barbadoes, Greece, Madeira, and the Shetlands are all favorable to long life.

—Dr. Elliott reports a case of morning sickness of pregnancy in which five drops of the tincture of iodine in a spoonful of sweetened water was given. The effect was magical. The vomiting ceased at once.

—The Royal College of Physicians of London and Royal College of Surgeons have placed on their limited list of accredited colleges the Northwestern University Medical School (Chicago Medical College).

—To remove from the breath offensive odors, such as are due to whiskey and tobacco, E. J. Kempf (*Ind. Med. Jour.*) asserts there is nothing more effectual than 1 part of hydrogen dioxide in 5 parts of rosewater.

—The oldest practicing physician in the United States is said to be Dr. O. R. Skinner of Freehold, N. J., who is in his 93rd year. He was a surgeon in the civil war. He is kept busy with his professional duties and answers promptly all calls.

—A woman relatively sterile for a period of two to five years has one chance in ten to become again pregnant. After five to ten years' sterility her chances are only one in fifty. After ten years her chances are reduced to one in a hundred.

—Attention has many times been directed during the past year to the rôle which the urine undoubtedly plays in the dissemination of typhoid fever. It has been proved that the germs exist in the urine long after convalescence has been established.

—J. K. Caird, a wealthy manufacturer of Dundee, Scotland, proposes to erect in that city a cancer hospital at a cost of $90,000. He has also guaranteed the payment of $5,000 a year for five years for original laboratory work in investigating the disease.

—A hundred thousand dollars for cancer research has been donated by Mrs. Collis P. Huntington to the General Memorial hospital for the treatment of cancer and kindred diseases. The fund is in the nature of an endowment, the interest alone to be used.

—According to a recent report from Geneva, 119 adventurous mountain climbers lost their lives in the Swiss Alps during the year 1901, the fatalities being double those of the previous year. The number of deaths from this cause has largely increased during the past few years.

—Autopsy upon a boy of 16 in London revealed a slate pencil three-fourths inch in length in the left hemisphere of the brain, where it had caused an abscess. The boy had suffered from pain in the head for five years. The pencil is supposed to have been introduced through the nose.

The results of Dr. Koch guaranteed to stamp out malaria in Dares-Salaam (German East Africa) in five years through the assumption that the germs were carried by mosquitoes, have been so successful, says the British consul, that by the end of 1903 malaria will have disappeared entirely from the place.

—The latest method of attempting to secure an aseptic condition of an infected wound consists of the application of a saturated solution of permanganate of potash, and after an hour or so removal of the gauze pad containing the permanganate and covering the wound with several layers of gauze saturated with peroxide of hydrogen. It is said to be the best antiseptic dressing yet devised.

—Professor Moriz Kaposi, the most celebrated member of the Vienna Medical School, died on April 6th. He was the greatest authority of his day on skin diseases. He and his father-in-law, Professer Hebra, were the founders of modern dermatology. Kaposi's clinic was the largest in the world. He had students and patients from all parts of the earth.

—A means of distinguishing death from catalepsy has been devised by Dr. Ricard of Marseilles, and submitted to the Academie des Sciences. He injects fluorescin, a strong coloring matter that is not poisonous, into the veins. A gramme of fluorescin solution will color 45,000 litres of water. If there is any circulation the body will turn grass green in two minutes, but the color passes away in a couple of hours without doing any harm.

—There is one rule that ought to be taught in every school (*Health* thinks), and by parents to their children, and that is—never lift a wire off the ground. When you see a wire hanging from a pole or a house, or in any position, it may be a telegraph wire, which is harmless, or it may be an electric live wire, which is always deadly, so the safest plan is to let it lie. So long as the wire is on the ground it is harmless, the moment it leaves the ground it is dangerous. You can pull the slack with your hand or foot any distance, so long as the end touches the ground, but the instant you lift it you become a part of the electric circuit, and the current will run to the ground through your body.

ORIGINAL ARTICLES.

THE PRACTICE OF MEDICINE AS A SCIENTIFIC PURSUIT.

BY F. PARK LEWIS, M.D., BUFFALO, N. Y.,
Member of the American Medical Association, etc.

WHEN we think of the various sciences and their progress during the world's development, we realize that the one fixed fact in the sphere of knowledge is that there is a possible beyond to everything, that nothing is so sure within our grasp but that to-morrow may change its whole aspect to us. What we regard as a fixed scientific fact to-day may come back to us from another's hands with such additions or substractions as will give it a wholly new meaning.

The "facts" of science have been thus progressive and we conclude, therefore, that it is not so much the collections of facts in any branch of knowledge, as the attitude of mind toward these facts that gives it, and the men who concern themselves with it, the right to be called "scientific."

I mean to say that any subject may be so engaged in as to become either an art or a science while an art or a science may be pursued in such a manner as to render it neither artistic nor scientific. A man may call himself a scientist, may even get himself called so by a considerable portion of the world's students, and yet be unscientific both in mind and method. The primary characteristics of a truly scientific mind are openness, fairness, freedom from prejudice; without these how may any man find truth? The scientific method is also characterized by the clearing away of the personal equation, and not all who would be called scientists are great enough to pursue an end by this means. Yet the tendency in all modern thought is toward this direct, open, impersonal, systematic, but mobile, in other words scientific attitude. We find it influencing not only intellectual but material progress. Not only has the higher criticism modified the belief of the Christian world in regard to religious questions, not only has the reluctant acceptance by our fathers of the Darwinian theory given an entirely new outlook to the youth of the present generation, but the politics of to-day tends toward a foundation of economics, and economics is less theoretical, and more dependant upon social studies of the more exact and careful nature. Business also is employing scientific measures, and the success of the great industries that are the marvel of the century is largely due to this fact.

America is rapidly taking the lead in the great enterprises of the world, gaining control of its markets, influencing the policies of nations, becoming not merely a power but a dominant power, because she is applying practical scientific methods in every field where energy is to be spent, and because she is quick to feel every change of pulse and to meet varying conditions as they come.

Times change and men change with them. Methods and policies that were sufficient a few years ago, if still persisted in, are seen to be pathetically inadequate to-day. We could not, if we would, change these things. It makes, practically, little difference what we do individually. We may modify, but we cannot prevent the world's advance. We cannot push back the coming tide, but we may take things out of the way that might be caught by the inwash of the waves.

The history of medicine has been a mirror of the thought of the age. As there was a time when a "Congress of Religions" would have been impossible, when a congregation of Baptists holding church services in a Jewish Synagogue was unthinkable, so there was a time when the idea of medical unity was a chimera, beautiful in theory but out of the question as a posible reality.

The waves of progress that have rolled steadily on, have, at each successive ebb-tide, carried some remnants of tradition, of prejudice, of personal feeling. The medical profession of to-day is imbued with a spirit that half a century ago could not have been dreamed of. Difficulties that seemed insurmountable have been overcome, not merely in the way of technical achievement, but in the many fields where exact investigation and infinite pains have been rewarded by discoveries of constant benefit to the suffering. But almost better than these, because it has made such achievements possible, is the habit of thought which has been attained; the open, fair, unprejudiced, impersonal, exact, in other words, scientific, attitude of mind which has become characteristic of the medical profession, as it has of the leaders in every branch of the world's progress.

Again, the spirit of the age is co-operative. It recognizes the fact that twenty men working together have more than twenty times the strength of one man. Where a business firm once employed ten men and had two partners it would now have twenty partners and employ a thousand men.

In organization and co-operation is strength. This is a modern watchword. One may or may not believe in the amalgamation of great interests, but it is going to be tried. We might put out a hand to prevent it, with the result that we would doubtless lose the hand and nobody be any better off in consequence.

The benefits of organization and of co-operation are unquestionably many, and they are going to be tested as they have never been tested before, for the tide in that direction has just set in. It has long been apparent that medical co-operation was sure to come in the near future. The mental attitude of the profession made this certain. The whole question of school will ultimately be done away with, because it is unscientific. A method of medical practice is capable of demonstration or of disproof, and for a whole profession to be divided on such a point is too absurd to much longer be permitted.

But demonstration or disproof are not the work of an hour, and for many years to come the members of the profession may hold different views and use various methods in their work. There is no reason, however, why the men in the profession should not meet the spirit of the times in this, as it has in other ways, and co-operate heartily in the advancement of their common interests and the solution of their common problems. It would give a strength and a dignity to the profession to be thus united that is impossible to any branch of it in a dismembered condition. A division of strength is an obstacle to the greatest achievement, and is seen to be in every branch of the world's work. The time has come now when the far-seeing in the medical profession perceive this, and know it to be true. They know also that because men differ in some of the essential details of their work, is no reason why they should fail to take advantage of the great union, which does not consider what this man or that believes, but only *"has he a proper medical training and the character of a gentleman?"*

Beyond that no man dictates to another how or upon what principles he shall do his work, because medicine has not become an exact science, and will hardly become so while no two human machines are built alike, or require precisely the same handling.

If all qualified medical men were to unite in one great

association, it would not only add to their own individual strength and to the working power of the whole, but it would be the *step into rank that would put the whole profession into the line of progress.* This is not only true, but it is going to be done. If not now, then after the waves have done their work. That which stands in the way is not difference of opinion or of practice. It is tradition, it is prejudice, it is personality, it is desire for victory. Many can see far enough into the future to realize a little of what the result will be when these are swept away. Some few will help, and all the years to come will be their debtors, because, until this union is accomplished, individual men may work on scientific lines, the majority even may be true scientists, but the profession *as a whole cannot be looked upon as a scientific body while it is divided by a question of belief.*

The demonstration of the universality of the dual action of drugs, has not yet been made to the satisfaction of the entire profession, but it is difficult for a man or a body of men to demonstrate anything to other men whom they rarely if ever meet.

If a theory is demonstrable and its acceptance a thing to be desired, the way is surely not to build, or to perpetuate, barriers between those who hold this belief and the rest of the world. If those whom the bigotry of a past age excluded from comradeship with their fellows, did not build the barriers, those who have succeeded them do to-day perpetuate these barriers if they are not willing to have them abolished. The breaking down of the barriers which have existed between the different branches of the medical profession does not mean that all its mmbers shall be called upon to think alike or to adopt any uniform methods of work, or in any way to change their beliefs or their individuality or even their associations. That they should not be called upon to do this, is indicative of the broad spirit of the times and marks the passing of intolerance, the coming to the fore of truly scientific spirit.

If the time has come when it is possible for all properly equipped gentlemen to join in one organization, the failure to do this throws the burden of explanation upon those declining. It has been said during the past few years by many physicians that they could not join a general medical organization, because it would not grant them "freedom of thought and practice." If the level has been raised so high that there is no longer any question of "what do you *think?*" but only "what do you *know* and what can you *do?*" this one insuperable obstacle to a united profession is taken away.

This is a very high stand to take, and to many it will seem an altruistic one. But it is the only truly scientific position.

A belief is not a voluntary thing. One may remain in ignorance because of unwillingness to put oneself in a position to gain facts. But the possession of the same facts will not always lead two men to the same conclusions.

Is it not Heine who says "we do not possess our beliefs, our beliefs possess us?" Having certain data it is not within our power to say that we will or will not believe the conclusions to which these data have led others. Therefore, neither the acceptance or denial of a *belief,* can be the basis upon which a scientific society admits or denies admission to a scientific man. At the same time the practice of medicine has so broadened and enlarged during the life time of most of us. that the giving of drugs, important as this is, has come to be a very small part of the measures used by physicians in the treatment of disease. We have come to realize that the normal condition of the human economy tends to maintain a harmonious adjustment of all of its functions. When these functions have been disturbed, the first effort of the modern physician is to find where a disturbing element has entered.

Has the physiological chemistry been so imperfectly performed as to produce a toxine? Is faulty metabolism due to dietetic errors? Has the vulnerability of the system been so great as to make germ infection possible? Have psychological conditions disturbed functional activities, or has the nervous tone been reduced by some unsuspected reflex? Into all these fields of investigation the physician must go, correcting conditions which may have given rise to disease, and all these precede, and sometimes render unnecessary, any drug giving.

The first question that the careful physician of to-day asks himself is not "what shall I do to make this man well," but "what has he done to make himself sick?" Very few, therefore, of the men who differ from their fellow practitioners in the matter of therapeutics only, are willing to be called or to call themselves sectarian; they do not feel themselves to be so.

Differences of belief have been emphasized long enough; it is now time to emphasize *that which we hold in common.*

But upon those of us to whom a therapeutic law, immutable and invariable, is not a belief, but a conviction, rests the duty and responsibility of so formulating it that its demonstration must of necessity be accepted by the scientific world.

THE OUTLOOK OF MEDICINE IS TOWARD PREVENTION.

BY RICHARD C. BANKSTON, M.D., BIRMINGHAM, ALA.

MY subject is an old story. Years of effort, even decades of education, may be required to elevate the mind to comprehend its importance. With our present standard of education it would be futile to hope for change of radical nature in our generation, but by urging the necessity of higher education upon our followers we may better equip them to solve the problem. As scientists, we should call attention to the subject and propose measures preventing the introduction of epidemic diseases, and seek the causes of endemic diseases and stamp them out by wise legislation which should acknowledge no right superior to public welfare, no law above self-preservation. Take the scourge, consumption, the death-rate of which is greater than from all diseases of endemic character combined. We know it to be infectious under exposure to its germs; with the functions of life lowered, so as to lessen vitality and impair resistance, its onslaught then is rapid and its ravages dreadful. Can it be cured? We know more of it now than ever before, yet we do not invariably cure it, which makes us believe our safeguard is prevention. Should it at any time be curable it would be during the stage of early invasion and not after its attack has developed in the tissues and changed their character thoroughly. It behooves the physician to agitate this subject, and I am sure an intelligent, humane people will endorse any measure advanced that appears to have the requisites to get the best results on this line of study. There has been no proposition advanced for medical consideration that has a more important bearing upon the future of mankind than does the study of consumption, and means that will accomplish its eradication. A comparison of past and present statistics, and prognosis drawn therefrom, warrants the strongest appeal which can be made to awaken interest in the study of this serious menace to posterity. The physiology of health is to keep the bio-

logical forces upon such a high plane of metabolic activity that all functions may be harmonized, and the powers of resistance so strengthened as to resist the onslaught of disease or the approach of degeneracy. When laws have been modified so as to weed out taints, prevention will be as real in result as the present course is chimerical in effect. The necessity of wise legislation for obtaining results will be recognized soon; that great investigator, Education, is certain to call attention to the need of restraint upon causes producing disease. As a prime consideration in prevention every one should study individuality. Take an inventory of physical and vital forces and resistance, conserve and use them wisely. Make sleep and physiological rest paramount. You will find a force in stock to keep functions moving on a highly vital plane for a century or more. I do not mean for a man to endure a long old dotage. He will be robust and vital until near the end, which he can realize is coming by the cessation of force and vigor. I believe it was Sancho Panza who said: "God bless the man who first invented sleep." Man's future rests largely in sleep! It is then that repair, growth and development are effected. Consequently, full hours of sleep mean perfection and development of strength necessary for conservation of waning powers. The old saw of the "Early bird catches the worm" can mean the demolition of the worm because it arose too early, therefore, do not fear to give yourself enough sleep or it may be with you as it was with the early worm! These theories are worthy our thoughts. Some of them seem fully to fill preventions perspective. The details of any special method, whether it be vaccination, quarantine, or any measure applied for preventing infection from obtaining a foothold in a country, or of suppressing one, does not come within the province of this paper. The intention here is to advocate the extermination of germs and all potentials of degeneracy, as the true means of preventing disease. By education the mind inclined toward the science of medicine can have the knowledge unfolded that is needed in development of the high intellectuality required in pursuit of possible prevention. Education will create a sentiment in favor of purifying the social and physical fabric, and preserving health that will unfold to man a knowledge of self, delineate character, and teach our women that perfect physical welfare is the quality with which they ought to be endowed that they may be fitted to become mothers of a people of high type, superior faculties, and large powers of physical endurance. It will teach parents how to rear children to become integers in the problem of continuing the highest type of humanity, that morality may ripen into the best civilization. It will show that science may develop and cultivate the type best fitted to survive, and to perpetuate our kind. Educate, that the masses may learn better ways of living, of thinking, of economizing physical, mental and moral energies to the end that mind may know that disease is not an unavoidable concomitant of environment, but that health should be the normal condition of modern civilization. It is useless to urge any measure of prevention upon people who do not understand the value of a high physical, mental and moral plane of health. Such people must be educated and put in appreciative touch with facts relating to causation and perpetuation of disease by germs and virile poisons which can be traced to demonstrable, avoidable causes. Education with its concomitants, health and civilization, favors the enjoyment of existence and prolongation of life. To elevate the status of education is not an abstract dream of Platonic aspiration, but is an interwoven reality with the life of posterity, and must prevail by its results. Man's improvement is indefinite. I do not believe so much in perfection as in progressive advancement through education. Remember one fact of importance—whatever deteriorates life or lowers vitality should be corrected, that the sum of individual existence may be lengthened. By transmission, that quality will influence progressively the lives of offspring. We have the solution in education, a well ordered scheme of which embracing the scientific appplication of physiology, biology and hygiene wouud be a plan of fundamental value in prevention. In the new school of prevention creative genius will proclaim a way realistic in vitality, and any measure not in accord therewith will be relegated to the past. Along with this subject must be considered a matter of much importance: What shall we do with the dead? I do not doubt that tuberculosis and typhoid are distributed from our cemeteries through drainage. If all remains were cremated it would remove from civilization a great evil. In giving the question serious thought, we feel apprehensively interested in the outcome. The germs of some diseases such as those mentioned, are so virile and tenacious that they can exist for years in our cemeteries and become distributed to surrounding earth, and by force of capillarity be transported to some place where conditions would be favorable. They would multiply and eventually be carried to the home of man, taken into the system, and there manifest their presence by pathological results. Cremate the dead of all animal and all vegetable matter that might prove a pabulum for sustaining germ life. By that means alone they can be destroyed. To study the subject of sanitation for its best results is a question of vital consequence. While it has its limits, it occupies a broad field as a factor in prevention. To consider the subject now from another standpoint: When culture tests and the microscope demonstrate the presence of a transmissible disease, steps should be taken to isolate the focus by international agreement, to prevent its spread through commerce and travel. In the absence of such agreement, it would be well for each country where conditions might favor development of infection to adopt vigorous measures and guard against invasion by quarantine or absolute non-intercourse with infected countries, until the pest could be stamped out, and its absence demonstrated to the satisfaction of pathologists, competent to pronounce judgment upon the conditions. The partial degree of success attending the lax methods heretofore employed demonstrated the possibility of absolute prevention, if all avenues of invasion are guarded and nothing allowed to enter from infected districts. A sum equivalent to the means lost in trade disaster during one epidemic of yellow fever would defray the expense of cleaning up the germ breeding places of that scourge, and its eradication from the face of the earth! A means will yet be demonstrated which will as certainly prevent yellow fever as vaccination does smallpox. Medical science is well equipped to grapple the subject—what we really need is international harmony and co-operation. We cannot impress the importance of prevention upon a people who are ignorant; therefore the first step is to educate the masses. Yet the perspective of education in its farthest possibilities is infinite. The more you educate the mind the more it demands to know. Inquiry and research stimulate possibilities and open new fields for study; it is a never-ending problem with no true solution in sight, therefore, we may expect progressive results without limit or cessation. The physician, chemist, and microscopist should be poineers in the movement. The physician, I know, is ever ready to sacrifice pecuniary advantage upon the altar of science, that the light

of knowledge may continue to shine, shedding a halo of bright radiance over the field of inquiry, that research may find the jewel in the form of complete prevention of disease. While on this subject it would be well to allude to a vast crime which, next to consumption, is destroying more lives and souls than any other cause. I mean the liquor, opium, and cocaine traffic. A study of its insidious and loathsome results will convince anyone that it is a wide open door to destruction. The physician is the proper one to call attention to the danger in these drugs as being destructive to digestion and nutrition. Upon our descendants the saddest blow falls, because the progeny of the drunkard is of poor vitality, inferior intellectually, and a disappointment generally! It is not within the province of this paper to go into the criminology of drunkenness; yet it is a factor which must be eliminated to help perfect the plan of prevention which will result in the improvement of man and make him superior in future to the man of the present. But the pernicious liquor and drug traffic must cease to be an element in degenerating vitality and debasing mind. It is the greatest enemy to an improved posterity now known, except possibly the scourge, consumption, and its congener syphilis. Before I leave this subject I will ask my hearers to ponder well. Try and help formulate a plan to prevent disease from entering the body, that prevention may be demonstrated and posterity enjoy the blessing of a highly perfected life through our interest in their behalf. Shall we admit that progress is at an end in our present idea of prevention? No! let us never imagine that any high purpose or noble thought is ever lost or ended. We may not witness its development, nor see it bloom forth in beauteous perfection, nor reap a rich harvest of result; but when we have sown the seed, with knowledge of result wanted, then may we gather the harvest of success. That fact accomplished the fondest hope of life will be realized. Do not fail to comprehend the true scope of this subject. Give it deep study and let us hope for favorable opinion that it may not be retarded by unscientific, illiberal criticism. It should attain popularity commensurate with its importance and be so closely studied that its value will impress wherever suggested. We are continually striving after new means with which to cure, when it is apparent to anyone giving the subject careful thought that change will be constantly occurring because our methods are incorrect. What broad intelligence needs to do is to habilitate prevention, and advance it as the means to accomplish results to which no foresight can predict an end. All physical phenomena are interesting. Their sublimity is not obscured by vague inception. Their finality, though shrouded in mystery, is important, and engages our consideration to a greater extent than any subject known. It is of such general interest that we refer to it because we realize it a barrier which must be overcome before we can progress further in our search for perfection. Cast off the serfdom of tradition—pull asunder the manacles which bind us to a past. With faces turned toward the light of Twentieth Century knowledge looking eagerly for further advance, cry *onward, upward,* until achievement will justify the claim that medicine as a science is above every other in the history of the world! Then the doctor, who stands to-day with lawyers, statesmen and divines, will easily assume position above all, recognized as the guardian of life and steward of man's happiness, honored as leader by every avocation. Happy in that attainment, aspiration gratified, ambition satisfied, enjoyment should be supreme. Let us feel the heart-throb of progress in the breast of humanity and know that a great harmony has been established in prevention which will exist through all time as the true means of keeping that blessing—*health*—above every other attainment! Let the silly irony of skeptics who hold that truth is variable be forever silenced, and in the concert of untied effort let sophists sink to oblivion. I tell you earnestly the trend of events points to prevention as the route for future medical thought, and the characteristics of health will be our highest study.

QUACK MEDICINE.

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THE proper consideration of this subject presupposes an official, detailed analysis which is not available in this country and which is one of the duties of the national body of physicians or of one of the government medical services and the execution of which should be urged for the near future. From legal reasons, it is obviously impossible to deal specifically with the subject, from present occasional unofficial analyses or suppositious information as to the composition of popular remedies.

Beside the ordinary quack nostrums, we must remember that even an ethical proprietary compound may be similarly misused and that many secret remedies otherwise introduced to the medical and pharmacal professions in an apparently ethical way, are really intended for lay use and that some manufacturers appeal both to the medical profession through the ordinary channels for support, while advertising to the laity in the popular press. Individual druggists also prepare imitations of various nostrums, for prescription over the counter and it may be pertinent to inquire how long the medical profession will continue its patronage of wholesale or retail pharmacists guilty of this form of double dealing.

The enormous vogue of quack medicines is explained partly by the popular love of mysticism and humbug, partly by inaccessibility in terms of distance or expense of regular medical advice, partly by failure on the part of the laity to realize the paramount importance of accurate diagnosis as a basis of therapeutic measures. The profession is largely responsible for these conditions. When the physician discards placebos and suggestion, ceases to appeal to the confidence of the patient, and honestly states that his diagnosis is in doubt, not that he hopes to avert this or that "threatened" disease, and places the healing art squarely before his clientele as based upon two factors, the application of scientific principles and of empiric knowledge in the absence of full understanding of cause and effect, then, and not till then, may we expect the popular conception of medical mysticism to be supplanted by a spirit of loyal and intelligent coöperation.

The second obstacle must be met by professional organization which shall provide for the remote inhabitant and for the large class which lies between comparative affluence and avowed or implied pauperism and which must now depend largely upon the charlatan or upon inefficient and unjust lay schemes of insurance against injury and disease.

The laity will never learn the value of diagnosis—which includes far more than the naming of disease—while physicians in good standing prescribe without adequate examination, judge of anemia by the complexion and diagnose malaria where neither the parasite nor its means of conveyance is indigenous, or allow diabetes and nephritis to advance nearly to a fatal issue before it occurs to them to investigate the urine.

Most proprietary remedies are based on the same drugs as are employed by the regular profession. The dangers in their use are:

1. The probability of neglecting indications that do not appear from a superficial and unskilled diagnosis.

2. The impossibility of pushing powerful drugs in emergent cases without close supervision and, in general, the impossibility or applying a ready-made formula to any particular case with more than a mathematic probability of accomplishing the desired end.

3. The toxic action of the medicine itself. While acute poisoning is usually guarded against, cumulative action often results in chronic poisoning or even syrups or other components, which can scarcely be considered toxic in the ordinary sense, may produce derangements or digestion, chronic inflammatory changes and other complications.

The first two objections must be understood as applying to all of the various kinds of nostrums to be discussed, while the mere citation of active drugs will suffice to suggest their well-known toxic action, which can not be considered in detail in a paper of moderate length.

1. *Bitters.* Most of the simple aromatic bitters are used in various combinations, usually with considerable amounts of alcohol, even when the opposite is claimed, as stomachics, spring-of-the-year medicines, liquor substitutes for temperance advocates, supporters during such critical periods as menstruation, pregnancy, lactation, the menopause, or during periods of strain and overwork. The bitters are notoriously inefficient and, therefore, comparatively harmless though their protracted use may cause gastro-enteric catarrh or clonic or tonic overstimulation of peristalsis. Considered as alcoholics, these medicines sometimes act beneficially in inducing a moderate indulgence in those who would otherwise drink to excess but, on the other hand, they may lead to alcoholism on the part of those not otherwise tempted. They can be of value only as temporary spurs to digestive secretion and motility, and possibly to absorption.

2. *Dyspepsia cures.* While the bitters were, and are still, largely advertised for this purpose, animal and vegetable digestive ferments are now prepared for lay use, on a considerable scale. As the ferments of the body are almost the last factors to yield to organic or functional disturbance, such remedies are rarely indicated, though they are employed almost as much and as irrationally by the medical profession as by the laity. Such drugs fail to strike at the root of the trouble and they weaken the natural and spontaneous digestive strength of the body, by supplying an artificial and transient substitute.

3. *Cough syrups, Consumption and Asthma cures, etc.* Many of these are opiates, containing morphine or codeine or other preparations of opium or else some drying and sedative drug like atropine. It should be remembered, however, that they are no worse than the Bellevue Cough Mixture and various favorite formulæ and ethical proprietary syrups, used by the regular profession. Some few are comparatively innocuous or even excellent preparations of tar, balsams and other stimulant expectorants. The croup cures usually contain ipecac, often with tartar emetic and some of the more recent contain apomorphine.

Asthma nostrums are often sold in pairs, liquids for internal use and powders or papers for fumigation. The former contain lobelia, grindelia, hyoscyamus, stramonium, etc., the latter alkaline nitrites, stramonium leaves, etc. The more modern asthma quacks employ nitroglycerine, amyl nitrite, etc. As *asthma,* even as used by the medical profession includes chronic bronchitis and emphysema and is the expression of the most diverse constitutional states, such as renal and cardiac failure, perversions of nutrition, organic central nervous lesions, peripheral nervous reflex from the ovaries, cervix uteri, rectum, gall-bladder, etc., it is obvious that the direct treatment of the spasm of the bronchioles, however well applied, is a small part of the radical treatment of the disease.

4. *Catarrh cures.* The old-fashioned snuffs are now almost obsolete. The nasal douche, unless very carefully employed, is apt to injure the Schneiderian membrane, even with a saline solution. Hence, even the quacks have mainly abandoned it and now use sprays of various kinds, chiefly watery solutions of alkalies, mild antiseptics and astringents, and solutions in mineral oil of menthol, eucalyptol, camphor, etc. Many of the hydrocarbon bases are imperfectly refined but, on the whole, it is mainly in the failure of nice discrimination that the proprietary sprays differ from those used by most regular practitioners.

Inhalations, whether used with a tube or intended to be breathed from the hand or from hot woter, or whether pungent drugs like cubebs are burned in a cigarette, are very similar to similar preparations of ethical standing. In all such medicaments, however, we need to guard against excessive use, especially when carbolic acid and iodine and astringents are contained.

5. *Soothing syrups.* These are practically always syrupy opiates or occasionally milder depressants, such as bromids. Even the lay press has been instrumental in warning against their use and only the most ignorant or depraved mothers and nurses now employ them. Their baneful effect is three-fold—immediately against the nervous centers, immediately against the digestive organs and ultimately tending to chronic nervous and nutritive weakness, which may be life-long.

6. *Rheumatism cures.* The older representatives of this class contained alkalies, rhus toxicodendron, phytolacca, iodids, sarsaparilla, etc. At one time or another, almost every cheap *alterative* has been thus employed. The new formulæ contain salicylates, variously combined. Most vegetable alteratives are comparatively inert, but phytolacca, iodids and salicylates are toxic if taken continuously. Rheumatism, as diagnosed by the laity, include true chronic rheumatism, myalgia, neuralgia, *neuritis,* pain due to *organic disease, tertiary syphilis, tubercular and surgical diseases of bones and joints,* those italicized being especially likely to develop to a serious stage if neglected.

7. *Cures for Syphilis and blood disorders.* These are usually advertised so as to include chronic rheumatism, acne and the most diverse conditions. Mercury is seldom included in the more modern nostrums, on account of the impossibility of controlling its ingestion without elaborate warnings that would alarm prospective users. Iodids are usually contained in these medicines, even the sarsaparillas and "purely vegetable" compounds being said to contain them in most instances.

8. *Skin cures.* Those for external use consist mainly of sulphur, in a mild antiseptic wash and are probably harmless, though of little value except against acne. The internal remedies are mainly based on arsenic, and the danger, both of systemic poisoning, including the setting up of a chronic nephritis and of producing ultimately a thick, crackly hide, amounts almost to a certainty.

9. *General tonics.* These comprise iron, manganese, strychnine, quinine, so-called beef, iron and wine, some

of which are genuine and some of which contain cheap mixtures of iron, alcohol and proteid; alcoholic bitters, variously altered, cod liver oil emulsions, malt preparations, which may be nothing but beer on the one hand or molasses on the other; and preparations of hypophosphites or phosphates. It will be seen that very few of these are apt to produce serious toxic symptoms but that minor disturbances of digestion may be caused.

10. *Headache remedies.* While the older ones were chiefly saline cathartics, the modern ones are nervines, divided into two classes, powders containing acetanilid or some similar coal tar derivative, and, occasionally, cocaine or some other anodyne alkaloid; and, secondly, effervescent saline preparations of bromid, caffeine and phosphates. The latter, being in most instances, physiologically incompatible, produce little trouble except from the encouragement of pernicious habits although if used excessively, one or other of the active ingredients may produce characteristic chronic symptoms. Several classic cases of acetanilid poisoning have been reported from the use of headache powders and possibly some inexplicable cases of sudden heart failure may be due to this habit.

11. *Cures for the alcohol and other drug habits.* The old-fashioned substitutes for alcohol have already been considered. The modern extra-professional cures are chiefly carried on at institutions and, it is said, depend upon the use of strychnine or atropine as a stimulant and the simultaneous injection or administration in other form, of apomorphine, whenever liquor is allowed as a test. The patient soon becomes disgusted and is convinced that he is unable to tolerate alcohol in any form. Various gums and sialagogues are employed to take the place of the local stimulation of tobacco while the inner bark of the tulip tree is said, in some unexplained way, to produce a distaste for tobacco in any form. The essential element in any successful treatment of a habit is to secure the patient's coöperation and it is a question whether the end does not justify the means. At any rate, it is absurd to suppose that the few cases of insanity which have occurred in the inmates of unethical institutions for the cure of drug habits, are due to the means employed, when we consider the liability of these patients to mental alienation. But it is unfortunate that hospitals under control of the regular medical profession cannot be established for the care of drug habitues.

12. *Cathartics.* Some of these are advertised as liver remedies, others are or were in vogue as headache cures but the majority are avowedly cathartics. Except the liver pills, few contain mercurials but are made up of on the model of an "A. S. & B." pill, with many modifications. Many patients buy tablets primarily intended for physicians' prescription. The teas and powders are composed mainly of compound licorice powder, senna, and similar mild laxatives. Of late years, cascara has become the favorite laxative both of the quack and the regular physician. Probably for occasional use, most of the cathartics are allowable but for any chronic state, the utmost caution is necessary and the use of atropine or any other drug that has any decided constitutional effect, is undesirable.

13. *Liniments, salves and plasters.* The absorption of morphine, cantharides, atropine, etc., must be borne in mind but most such preparations are comparatively harmless.

14. *Hair tonics, dyes and bleaches.* The older hair tonics were diluted alcoholic solutions of quinine or some other supposedly local stimulant. The recent ones usually contain jaborandi. The dyes contain lead, silver, or cyanogen compounds and may cause systemic poisoning, either by direct absorption or by being gradually washed out of the hair by beverages. The effect upon the hair is slowly toxic. Bleaches formerly depended mainly on borax and alkalies, at present upon hydrogen peroxide. While systemically harmless, the hair loses its luster and premature greyness is caused.

15. *Pain-killers.* Those for internal use contain an opiate, chloroform or mydriatic or cardiac depressant anodyne. Those for local use, as dental wax or gum, "balms," etc., for application to the external surface depend upon the presence of aconite, veratrum, cocaine, gelsemium and other dangerously depressing drugs.

16. *Gonorrhea cures.* Most of these, whether for use by injection, bougie or internal use, are identical with those used by the regular physician, with the exception of the later remedies. The danger of complications, especially from any injection sufficiently strong to warrant the claim of a rapid cure, the danger of self-infection, especially in the eye, and of infection of others from relying upon a sweeping promise of cure, need no discussion.

17. *Monthly regulators.* Practically all of these owe their sale to the desire to produce an abortion and, if not, an amenorrhea due to tuberculosis, chlorosis or other constitutional disease or to intrinsic pelvic disease, requires the most careful treatment. In the majority of cases, we must consider first the acute toxic action of tansy, pennyroyal, parsley, ergot, etc., on the system at large, seconly, the effect of aloin and the ordinary oxytoxics in producing pelvic congestion, thirdly, the result. in shock and danger of sepsis, of the abortion itself.

18. *Leucorrhea injections, suppositories, etc.* These contain boric acid, tannin, as such, or in some vegetable product, hydrastis, aluminum, zinc, etc. Their local effect may inflame the parts but they seldom produce serious general symptoms.

19. *Sexual tonics.* This group of drugs, familiar to all through the "before and after" illustrations, consist of phosphorus, damiana, strychnine, quinine, cantharides, etc. The danger from their use includes the direct toxic action and the incentive to sexual excess.

20. Local sexual stimulants may consist of any simple ointment to be aplied with friction or, for males, of suction pumps to produce engorgement. All such measures are practically modes of masturbation.

21. Instruments and injections or suppositories for the prevention of conception exercise their greatest harm along moral lines. They must be admitted to have had a beneficial effect in diminishing the frequency of interrupted coitus. The chemicals employed to kill spermatozoa may exert a toxic action but even corrosive sublimate need not be in sufficient strength to cause appreciable absorption, unless used immoderately often.

22. *Bust developers.* These are either mechanic—suction devices similar to breast pumps—or depend upon increasing the local blood supply by the friction used in applying any ointment or lotion, on upon the increase of secretory activity by iodids, etc. They may possibly predispose to organic disease of the breasts by traumatism and certain drugs like iodids may be absorbed.

These last few classes of quack medicines and applications, aside from their direct physical and moral dangers, are serving to educate the youth of the land in sexual matters from the meanest and most depraved standpoint.

23. *Worm medicines.* The common form is a santonin confection for children. Intestinal parasites are by no means so common as supposed by the laity and these drugs, all more or less toxic are given too freely and often unnecessarily.

24. *Eye washes, cataract cures, etc.* The former contain salt, zinc boric acid, etc. Lead and alum are somewhat dangerous, the milder astringents merely irritating and often ineffective. Cataract cures depend either upon the fictitious increase of vision by mydriatics or upon counter-irritation, as by the volatile oil of mustard. The constitutional danger of the former and the local damage possible under the latter treatment are obvious. Here may be mentioned the pumps intended to remedy refractive errors by improving the shape of the eye ball. Such instruments are dangerous by reason of the possibility of internal hemorrhage and retinal detachment and are of course useless to effect a permanent correction.

25. Finally, may be mentioned the absolute frauds, for local or systemic use, whether purporting to be drugs, sources of oxygen, electricity, vital energy, antiseptic radiation or what not. These are, of course, as harmless as they are useless.

POINTS APT TO BE OVERLOOKED IN RENAL DISEASE.

BY A. C. GRIGGS, M.D.

ALBUMINURIA as a diagnostic indication of renal disease is universally relied upon, yet occasionally it is not found in well marked cases of chronic nephritis, as pointed out by Coquet. He divides these cases into three classes: (1) Those in which albuminuria is absent only a portion of the time; (2) those in which it is absent until just before death, and (3) those in which this symptom is absent during the whole course of the case. The unfortunate side of this classification is that it does not show the clinical course of the case, only the vagaries of this symptom.

Hirchler, investigating the nature and origin of uremic diarrhea, has studied the action of various constituents of the urine upon intestinal peristalsis: Creatin and carbonate of ammonium increase the movements of the intestines through the vagus nerve, while urea, creatinin, and sodium chloride increase peristalsis by direct action on the intestinal wall, while phosphate of calcium, calcium chloride, hippuric acid, allantoin, and sodium phosphate have no effect. He worked in these experiments on young dogs, opening the peritoneal cavity, under a warm 6-per-cent. solution of sodium chloride, and the reagents injected into the intestine, or injected into the jugular vein with the vagus nerves first uncut, then cut. It is probable that among the other substances retained in the body, and contributing to constitute the uremic poison, there will be found some substances directly paralyzant to intestinal movement, or, as is most likely, that the last result of stimulation is the exhaustion and paralysis of the intestinal coats or of the nervous centers which control peristalsis. Intestinal derangements are common in uremia, generally being in the nature of diarrhea, so that the practitioner does well to suspect those seeking treatment for persistent alimentary troubles of having an underlying nephritis. It is well to remember that the administration of an opiate in the treatment of any diarrhea patient above 50 years of age may be disastrous, for opium in cases of renal insufficiency acts wretchedly. From uremia comes a class of symptoms due to altered urine and partly to the influence of the hemotoxic condition upon the nervous control of the lower urinary tracts.

Many renal affections, especially if connected with neuralgic or inflammatory disturbance of the secretory apparatus, are accompanied by vesical symptoms without the bladder itself appearing to be affected. These are largely signs of vesical irritation, finding their most common exponent in the pollakiuria of chronic Bright's disease. Arthritic symptoms, closely resembling those of acute arthritic rheumatism, may appear as part of the uremic condition. A patient who had been affected for a considerable period with well-marked chronic parenchymatous nephritis, noticed that the edema, which was almost constantly present in slight degree, was becoming increased, and that the flow of urine was becoming less. At the same time he complained of intense pain in the joints of the foot and knee, without any special increase in temperature. The pain increased daily with the increasing renal insufficiency. Uremic convulsions of an epileptiform type appeared, followed by coma. Free purgation and diuresis were successful the folowing day in procuring a return of the conscious condition; and, singularly, with the disappearance of the uremic coma the articular pains diminished and disappeared; possibly this attack was a coincident rheumatism, or that the entire paroxysm was induced by a coexisting cerebral and articular rheumatism; but it may be that the articular symptoms were manifestations of poisoned blood due to renal failure.

Some years ago, in a French periodical, Le Dentu published the discovery of a peculiar occurrence in the removal of a calculus kidney; this organ was resonant and gave rise to a crepitation or gurgling on pressure, revealing gas in the tissues; on chemical analysis it was found to be composed of nitrogen, oxygen, and carbonic acid. The kidney was removed intact, and it would have been impossible for the gas to have entered the organ except from the blood or from decomposition of the tissues. The absence of hydrogen and sulphuretted hydrogen precluded true putrefaction.

Calculous pyelitis has been reported by Reymond in a woman in whom the existence of a hydronephrosis was determined in the right kidney. Nephrotomy was performed and a calculus weighing 6 grains removed from the apex of the distended pelvis. It was composed of phosphate and oxalate of calculus. The woman passed, shortly after, into a uremic condition and died. The bladder was found unchanged, the left ureter normal, the right dilated, the right pelvis distended and inflamed, and the right kidney represented by a mere shell. Pyelonephritis, probably from extension from the bladder in a man 32 years, has been reported; he came into the hospital for relief, but he was refused operation because of his almost moribund condition. A distinct tumor could be made out in the left lumbar region, and after death, which followed in a few days, the kidney was found enlarged and drawn from its place downward, displacing the pelvic intestine. Double pyelonephritis in a boy of 15 years of age occurred as follows: When a child, he had had incontinence of urine, and at 11 years of age he had had electrical applications made, at one of the hospitals, along the ureters. Following this the symptoms of cystitis became pronounced in the lad, and the renal affection ensued as a consequence of the upward extension. The urine was passed drop by drop, clear and purulent. There was tenderness in the left renal region, and the right kidney was enlarged and painful; the child died in a uremic condition; and at the autopsy the right kidney was found very large, soft, and adherent, while the left kidney was also quite adherent, but not so large; the ureters were very much dilated, and the bladder was small, with thickened walls. On section of the kidney the calics and pelves were found much enlarged; the renal tissue was reduced to a thin shell, of fibrous appearance and full of pus. Double suppurative pyelonephritis in a man, the result of a gonorrhea contracted fourteen years before, has occurred.

A dense stricture, for which the operation of external urethrotomy was performed, followed, but from time to time the stricture became involved, and, after a time, the kidneys, in the manner indicated.

Double pyelonephritis in older men has been reported. One case, a man of 50, had the left kidney atrophied to about two-thirds its normal size, little else remaining but the cortex, the interior being occupied by pockets of pus; the ureter was dilated, while the right was of normal size, but at the upper part showed some loss of substance.

For diagnostic as well as therapeutic purposes of pyelitis, it is well to divide the affection into three periods—the acute, indeterminate, and chronic. In the first class belongs a variety—primary pyelitis, which is especially like typhoid fever in its manifestations—marked in the beginning by headache, vertigo, malaise and fatigue, anorexia, and insomnia. Later, urinary phenomena became pronounced and diagnosis ready. In the second variety the general symptoms oscillate with the collection and discharge of pus, while in the last the symptoms are fairly regular and generally referable to the local condition in the first stage the primary indication is to diminish the pelvic inflammation by blood-letting or by intestinal revulsion. The blood-letting should be done in the triangle of the lumbar walls. Many prefer leeches to wet cups. In acting on the intestines pills made of scammony and calomel rather than the salines are often preferred. The second indication is to render the urine as aqueous as possible—best accomplished by an absolute milk diet (skimmed milk preferably). For the purpose of rendering the tissues more resistive to microbic influence tonics are required, for which purpose the author administers quinine and alcoholics in moderate doses. The treatment of the chronic forms is partly hygienic, partly therapeutic. The first of these heads includes such measures as increasing the functional activity of the skin, repose in bed, moderate exercise, prevention of chilling the surface. The diet is to be as unirritating as possible, milk being freely employed to render the urine limpid; but forbid all salt meats and game, all irritating and highly-seasoned food, and all fruits.

Render the urine aseptic by the use of balsams and benzoate of soda in small doses; if benzoate of soda cannot be used on account of the stomach, balsam of tolu, Canada balsam, or balsam of copaiba, or turpentine styrax and eucalyptol may be tried. Salol, borate of soda, boracic acid, and oil of Haarlem have also been suggested. As remedies intended to exert as astringent action on the renal pelvis, gallic acid or acetate of lead may be employed. These should be used only in the later stages, when the other drugs have exhausted their action, and may be associated with tonics. In using counter-irritation the actual cautery and iodine are preferable forms.

The origin, nature and presentation of the nervous manifestations of uremia have been clearly defined; separting this form of uremia from the gastro-intestinal form. Lancereaux looks upon the latter form as compensatory, and hence more significant. He separates a group of cardio-pulmonary accidents, these being the expression not of any local action of the uremic poison on the thoracic organs, but of the functional disorders of their nervous centers. The dyspnea of uremia is divided by the writer into three forms: *"The simple form,* characterized by acceleration of respiration and diminution of the fullness of respiration; *the paroxysmal form,* or Cheyne-Stokes respiration, in which a period of apnea alternates with one of dyspnea of regularly varying fullness; and *the spasmodic dyspnea,* simulating spasmodic asthma. The circulatory disturbances are generally of the nature of palpitations, more or less intense, of the heart and sometimes they cause sleeplessness. The cerebral accidents of uremia are sensory, motor, and intellectual, either singly or simultaneously. To the sensory disturbances belong the various subjective sensations of pruritus, of numbness, and of pain in different parts of the body, and visual disturbances. The articular pains described above probably are to be classified here as to the headache of chronic nephritis. The uremic motor disturbances manifest themselves as contractures, convulsions, and even palsies; the intellectual, as aphasia, coma, changes of character, and insanity."

A man aged 50 years, who had been ill for some time with the symptoms of chronic Bright's disease, presented a slight swelling of the right side of the face and complained of some toothache. The next day the swelling was much worse, occupying the entire side of the face. It was hard, the skin was especially red, and it was not especially characteristic in any way of erysipelas. The symptoms became much aggravated; dyspnea and fever became pronounced; the throat became involved in the swelling, and the patient died. Cultures made from the swollen area demonstrated the presence of the streptococcus of erysipelas.

Uraemia arises from a deficient elimination by the kidneys of various substances, and particularly of organic matters resulting from the waste of tissues. These substances, if the renal function is diminished or ceases from any cause, may be eliminated by the stomach and intestines, constituting the form known as *gastro-intestinal;* if this elimination fails, these substances are retained in the blood, acting on the central nervous system. Smith has detailed an instructive case as follows: "A plethoric man, of 45 years of age, who, after several weeks' illness with symptoms of hepatic disturbance, was taken seriously ill and went to bed, where he remained for a number of weeks with symptoms precisely those of acute Bright's disease. Fever ran high, tht urine was scanty, high-colored, and smoky, containing casts of blood and granular matter. Examining the patient about a week after this second attack, a tender point was found over the left kidney upon deep abdominal palpation. This was supposed to be due to a pyelonephritis, probably from the presence of a calculus, and the other symptoms were referred to a similar cause. The symptoms gradually diminished, the albumin left the urine, and the patient was apparently convalescent from the attack, when an exacerbation occurred two weeks after the beginning of this second attack; recrudescence of symptoms again occurred in two weeks, and in six weeks after this last. Finally, the patient handed his physician a small bit of tissue, which he had passed, with a considerable pain, by the urethra, two days after the final exacerbation of his symptoms. During this period of exacerbation the symptoms were those of renal colic, affecting the left side. After the passage of the tissue the patient rapidly recovered, and resumed his business. Microscopical examination confirmed this to be a renal papilla."

Israel selected the kidney for the study of coagulation necrosis on account of the regularity of the kidney cells. He cut off the circulation in a branch of the renal artery for several hours, and then, at periods varying from one hour to eight days thereafter, extirpated the kidney. Rarely all the epithelium in the obstructed area was necrossed, the latter process being generally limited to isolated patches. The majority of these necrotic areas

were in the cortex and the effect was as well marked after two hours anemia as after four, although, perhaps, the areas were not so large. Twenty-four hours after obstruction of the circulation the nuclei had disappeared, although by a special method of fixing the tissue they remained visible, but homogeneous and diminished in size, the lumen of the tube consequently increased; the granules in the cell-body irregularly huddled together, instead of being arranged in rows perpendicular to the basement membrane. Calcification began to appear in the cells twenty-four hours after necrosis. In the necrotic areas, within twenty-four hours, fibrin formed in a delicate net-work in the convoluted tubes, and in solid cylinders in the straight tubes, the process being favored by the desquamation of the epithelial cells and denudation of the basement membrane; and these cylinders of fibrin are regarded as analogous to tube-casts. It is possible that similar disturbances occur in Bright's disease, but it is rare that the obstruction to the renal circulation is so complete. The changes are not so pronounced and not so advanced.

Thompson illustrates the changes in the kidney in acute nephritis. His patient, a child, died from uraemia after a sudden illness, without any history of either scarlatina, diphtheria, or any other infectious disease. The kidneys were enlarged and swollen; and under the microscope the Malpighian tufts were swollen and anaemic, with the capsule thickened and studded thickly with proliferated cells. The epithelium of the tubules was swollen and clouded with granular deposits, and contained here and there groups of cocci or single ones; and in the tubules were granular masses, blood-casts, and collections of micro-organisms. McCallum has studied in a series of sixty sections from cases of renal disease, and asserts that as a cause of death "simple acute Bright's disease" is rare, the chronic character of the changes being apparent in his entire series. Edema of the epithelial cells he does not believe is ever limited to the glomerular epithelium, although the epithelial covering of the capillary tufts is particularly apt to be the seat of the process; it is met with from almost any acute disease. Fatty change of the epithelium is an evidence of a more chronic process, and is always diffused through the epithelium lining the tubules, as well as that covering the glomerules. Exfoliation of epithelium appears most frequently in the scarlatinal kidney, but occurs as well in other toxic blood diseases. The exfoliation of the glomerular epithelium is sometimes of such intensity as to completely fill up the capsule with the crescent-shaped cells, and by pressure upon the tufts to induce urinary suppression. Hyaline change of the capillary walls is not at all infrequent, tending toward the obliteration of the lumen of the capillary, and hence an impoverished blood-supply to the convoluted tubes. The obstruction of a capillary loop by micro-organisms leads to an apparent thinning of the wall of the capillary and to the crowding of the neighboring capillaries with leucocytes. This formation of thrombi by leucocytes tends to arrest the circulation through the tuft. The surrounding tissues, particularly at the point of entrance of the vessels, is infiltrated by round cells, which the author looks upon as the source of organization. Finally, in the study of the capsule and its contents, the writer speaks of the amyloid change. In the early stages of this deposit the arrangement of the amyloid matter is patchy, deposition continuing until the wall is uniformly involved. It leaves an irregular lumen to the vessel, and, as a consequence of the diminished passage of blood through the tuft, the epithelium of the convoluted tubes becomes more or less necrossed. The author does not believe that the amyloid material is ever to be found outside of the vessels, and he denies the existence of the true amyloid casts, not believing that the "waxy" casts, to which the name amyloid is sometimes applied, are constituted of amyloid material. He states that it is a common thing, while in health, for the lumen of the uriniferous tube to give a perfect cast of itself. These casts are long, stringy, and identical with what have been called "mucus cylinders," made up of coagulated sero-albumin and paraglobulin.

McCallum objects to the term commonly known as "cloudy swelling." He prefers to speak of the earliest changes as "edema," shown by the distended and actually dilated membrane propria—a change which he believes sometimes ends in the formation of a cyst. Following the edema a hyaline change occurs in the cells, mostly confined to that half of the cell nearest the lumen of the tube; this degenerated part may eventually separate from the unchanged portion and contribute to the cast formation. The part of the cell left adherent to the basement membrane may rebuild its free border, and the writer states that the nucleus mav at times be seen undergoing karyokinesis.

Many writers now separate both the pathological process and the clinical aspect of the genuine contracted kidney from those of the secondarily contracted kidney. The real granular or contracted kidney presents itself as the "red," eventually the "white," granular kidney, of a size of but a half or a third of the normal, with a thickened, opaque capsule, that is somewhat adherent to the renal substance. The organ is rather firm in consistence, and its surface exhibits more or less regular granulations, the projecting portions reddened, and containing more blood than the depressed parts. The cortex has contributed a large part to the contraction of the organ, although the pyramids are found somewhat contracted and more or less deformed.

Albarran, experimenting on the possibility of transferring tubercular infection from the lower urinary tract to the upper inoculated in the ureter of a rabbit a pure culture of tubercle bacilli, and then ligated the ureter. Following such a procedure a number of tubercular nodules were found developing in the kidney, pelvis, and calices. Under the microscope the ascending progress of the bacilli is seen along the canals, and the alterations they cause. The existence was noted along with tubercular changes of a diffuse nephritis, partly catarrhal and partly insterstitial. Tubercular processes were found generalized in the mediastinal ganglia and in the hip-joint. Steinheimer has reported a case apparently of primary tuberculosis of the uropoietic system in a man of 56 years of age, who had felt quite well up to nine months before, and from that time only had the complained. Suspecting, from the pain at micturition, the urgent frequency of the act, and the presence of pus and other elements, that possibly a vesical calculus was at the bottom of the affection, epicystotomy was performed; no stones were found, and within two weeks the patient died. At the autopsy two tubercular nodules were found in the bladder-walls, with some ulcerative changes. The right ureter was converted into a hard, fibrous band of the thickness of one's finger, with its mucous surface in a cheesy, degenerated condition. The right renal pelvis was full of detritis and ulcerated, the renal papillæ were shrunken, and the kidney was the seat of a number of cheesy masses. The left ureter was normal, and the kidney slightly enlarged, but practically normal.

Frisch studies the diagnosis of tuberculosis of the urogenital system. The symptoms, exclusive of the pres-

ence of tubercle bacilli in the urine, are very variable in character and occurrence and, therefore, never can be thoroughly relied upon for their significance. Even the occurrence of tubercle bacilli is not to be regarded as an absolute sign, since it has been demonstrated that in tuberculosis elsewhere than in the uro-genital system the urine and the sperm may contain bacilli. The author states that the discovery of bacilli in the urine is apt to be attended with difficulty both from the scarcity and the massive numbers to be encountered in different (or even in the same) specimens, at different examinations. One occurrence of the bacilli, that in which they are arranged in S-shape groups, is especially valuable as a diagnostic sign of a urinary tuberculosis, but it is possible that even in such groups the tubercle bacilli may find their way into the urine from more distant tubercular foci. Nevertheless, these groups are more apt to come from masses of bacteria in close contact with the urine stream. Where the urine contains large quantities of mucous he suggests that it be treated with an alkali to dissolve the latter, thus permitting the precipitation of the bacilli. Where the sediment is largely made up of urates and other crystalline substances he uses, after Wendriner, a solution made of hot distilled water in which is dissolved 12 per cent. of powdered borax, and afterward an equal amount of boracic acid added. This added to the urine dissolves the uric acid, urates, earthy phosphates, and other organized substances. The urine is permitted to stand until the sediment is deposited, then the supernatant fluid is poured off, the sediment washed with water and collected upon a filter, and a portion of this pressed (but not rubbed) between two covers, dried, and stained.

Probably one of the most accurate of tests for albumin in the urine is the one in which a small amount of nitric acid is poured into a test tube and the urine is allowed to flow gently down the side upon the acid through a pipette. At the line of junction of the two fluids a white ring is formed if the albumin should be present. For routine work this is probably the most satisfactory test for the practicing physician. There are a number of things, however, to be considered in its use. In the first place, it is well that a narrow, small test tube should be used. It makes it much easier to perform; in fact, in an average size test tube the results are often not satisfactory. The urine should be filtered, and both morning and evening urine should be examined. Sometimes a haze apears, due to the presence of muscin which comes just above the white line of albumin and in concentrated urines or after taking certain remedies, such as the balsams, a slight cloudiness may appear which is due to uric acid or urates, but it has not the appearance of the albumin ring. Should a colored ring appear at the junction of the acid in the urine it is simply due to the oxydization of coloring matters which are found in the urine.

—A local paper has discovered (*Med. Standard*) that the death rate is smallest where physicians are most numerous. This is true of the United States and figures are cited to prove the correctness of the statement. Holland, with a low death rate, has a larger proportionate number of doctors than any other country in Europe, and Norway has a small number of doctors and a high death rate. There is at once a good effect on the health of a country when its proportion of physicians increases. In England, where the number of physicians is constantly increasing, there is a corresponding decrease in the death rate. In the vast Russian Empire, with its enormous population and small number of doctors, the high death rate continues.

CONSERVATIVE METHODS WITH SPECIAL REFERENCE TO THE MEDICATED GALVANIC CURRENT IN THE TREATMENT OF TUBEROULAR GLANDS, GOITER AND UTERINE FIBROIDS, WITH SUGGESTIONS FOR THE TREATMENT OF PROSTATIC HYPERTROPHY.

BY M. O. TERRY, M.D.,
Ex-Surgeon General N. G. N. Y., etc.

IT is a great blessing to humanity that surgery has been perfected to the extent to which it is. Humanity may well greet the self-sacrificing surgeon with unsparing thanks for the greater improvements to come. This article is not, therefore, calculated to take away any honor from that branch of medicine for attempting to relieve advanced pathological conditions manifested in so many ways, but to deal with more conservative measures during the early stages; to direct the attention of the surgeon to the *cause*, or early treatment of diseases by other measures than the knife, instead of the *effect* of a disease; and, lastly, to promulgate treatment which can be carried out by the practitioner in the hamlet, town or city as, in the wisdom of the physician or surgeon, would seem best. It is to be hoped, therefore, from these preliminary remarks that my position may be so clearly outlined that the surgeons present will be likewise more moderate in their criticisms of conservative measures suggested than they would be otherwise.

Most of the profession are inclined to look upon tubercular disease as one only measurably, if at all, curative. Perhaps all will concede that cases showing various characteristics of the disease get well, but to state any positive measure that will absolutely eradicate so tenacious a microbe as the tubercular bacillus many will hesitate to concede. I shall, therefore, without any such presumption, offer some thoughts for consideration, the same having been the result of observations extending over an interval of more than fifteen years.

The intent of this paper to some extent is to strike at the tubercular microbe in, at least, one of its pathological manifestations and it is not intended to illustrate it by the use of the knife, excepting in one instance, but it is believed that the following case presents in such a striking manner the value of the knife as an auxiliary measure that I do not hesitate to bring it to your attention for consideration.

Henry W., æt. 16; weight 65 pounds, had been an invalid for four years. I was invited to see him while visiting in an adjoining town where I had performed an abdominal section. He was confined to his room with a special nurse, with nothing but a hopeless outlook, awaiting the end. A fistulous opening served the outlet of an empyemic pleural cavity. The discharge was of the most purulent character. The little patient had a temperature running from 99.2° to 103°, with night sweats and the usual pallor accompanying such an exhausted condition. His expression showed but a faint outline of hope. It was simply a question of waiting to die. A pathologist from Albany, N. Y., had made two examinations of the sputum and pronounced it tubercular. I said to the doctor upon leaving the house, "Why do you not try to do something which has in view a curative outlook?" The reply was but a cynical smile, indicative of the young man's hopeless condition. The parents called on me a few days later and asked if I really would take Harry's case and if I had any hope at all; that they had not. I merely stated I thought the young man was entitled to every measure known which had in view his greater comfort and the possibility of

restoration from his direful malady. He was immediately brought to the Utica Homeopathic Hospital. His side was douched out and a counter opening made and free drainage instituted. Various preparations were used, such as bichloride, iodine, bromine with soda, and creoline. The hot-air treatment by inhalation was also one of the auxiliary measures used. Such preparations as eucalyptus and pine-needle oil were added to the hot air. Fresh air and a painstaking diet were also carefully considered, as were deep breathing exercises. Two ribs were later removed which had its beneficial effect. All this treatment was carried on for months. It was noticed that the young man was growing and increasing in weight. Finally it was decided to remove a sufficient number of ribs to collapse the side. The reason for doing this, of course, was to bring the walls of the chest up to the impervious lung and to close the cavity. This seemed to have the desired result. This young man was under my care for nearly two and a half years. Upon returning home his coughing and expectoration had ceased, his weight increased from 65 to 118, temperature normal and his countenance presented one of unusual good health. Of course there is a concavity over the right chest caused by the removal of the ribs, but nothing else indicates his former hopeless condition. He has been apparently well for about a year, assisting his father in his office, who is a lawyer by profession.

It is thought that a case cannot be brought up wherein there can be shown the importance of a greater variety of combined measures, from the knife to the various auxiliary expedients, than the one just given in detail. So it is, we must concede in accordance with the old saying that, "there is good in everything." The surgeon has his place and the practitioner his.

One of the most distinguished oculists in the country once said in his clinique that he was of the opinion that every specialist should have, at least, ten years of general practice before entering upon the exacting and critical duties incident to a specialty. Those of us who have seen more than a quarter of a century of practice can appreciate the wisdom of this remark. This is true of surgery.

We have now reached the point in my paper where I wish to illustrate and show the methods by which cervical tubercular disease can be made to disappear as well as other growths without the knife. Glands about to break down must be surgically treated, but cervical enlargements, it matters not how many there may be, whether one or 50, will quite readily disappear under the medicated galvanic treatment. By "rapidly" I mean in from three months to two years. The greater number will disappear within 90 days. There will be some which will extend well toward the latter period named.

If it be true, by this treatment, one can get the results, which have been my observation for so many years, what a blessing to the young women who are ever on the alert, conscious of deformity and desirous of avoiding scars. Deformities must more or less necessarily follow the use of the knife, as most practitioners and surgeons know, in order to eradicate these not at all uncommon growths.

The water used for the electrode contains the chloride of ammonia and the tincture of iodine. I am not particular as to the quantity or strength of these solutions. Half an ounce of the chloride of ammonia and 15 drops of iodine to a quart of water will be sufficiently accurate for illustration.

As to the Method of Application.—The positive pole is to be placed at the back of the neck and the negative pole over the enlargements on either side. The medicated current can usually be tasted at once by the person under treatment. As to the strength of the current it will depend largely upon the individual. Patients can take from 20 to 50 milliamperes.

Without a galvanometer the patient can determine the proper strength of the current most suitable, for the sensation on application will be simply a mild degree of warmth to that of burning. From 10 to 15 minutes is usually the length of time for treatment and a repetition should be made, if possible, every five days, until marked improvement is noticed and then at intervals of one or two weeks.

This same treatment is applicable in cases of goiter. Good results may be obtained in from three to 12 months; the same as for cervical enlargements. In girls a goitrous condition will disappear absolutely. In persons more advanced, changes for the better are slower and greater perseverance is required.

As to the treatment of fibroids of the uterus by the medicated galvanic current, although it has been stated by some authors that this method of cure has been largely discontinued by many who formerly used it, yet I am quite sure that in well selected cases any surgeon who has the patience to continue this treatment, awaiting the gradual disappearance of the enlargement, before resorting to the more dangerous plan of excision will feel as satisfied over the results as the patient will be grateful.

The positive pole sponge is placed over the abdomen and the negative pole—a copper electrode—is passed into the uterus as far as it will go. The vaginal part of the electrode should be insulated, which can be done by slipping over it a piece of rubber tubing, pushing it up to the neck of the uterus after the electrode has passed in as far as it will go.

In case of a bleeding fibroid or a hemorrhagic condition incident to fibroids *the positive pole is used for the uterine cavity* until that feature of the case is corrected. For the reduction of the growth, however, I depend more upon the negative pole in the uterus, for this is really the dissolving pole.

The electric pad used for the abdomen should be of sufficient size to cover the borders of the growth. Patients can take from 200 to 500 milliamperes. Here, too, the patient is able to state the amount of current he can tolerate without the galvanometer. The interval of treatment for these cases is from 20 to 25 minutes. I usually give them for 20 minutes and the last five minutes a small sponge is applied over the sacrum in place of the abdomen. This has the effect of relieving backache, the current from this direction seeming to act as a tonic and its passage through the uterus posteriorly adds value to the efficiency of the treatment. When applied from the sacrum to the uterus it is always given much weaker; usually from 50 to 70 milliamperes.

Hemorrhages are frequently stopped after two or three treatments and uterine fibroids have been reduced to such an extent that they remain as innocent growths, not causing any trouble. I can now recall one of nine inches being reduced to four and a quarter; one of six inches to three; and since August, 1901, to August, 1902, I have given a woman 25 treatments for a fibroid of six and one-half inches internal measurement, which has been reduced to two and seven-eighths inches.

Much has been written of late in reference to the treatment of prostatic hypertrophy in men advanced in life. The chronic cystitis, the decomposed residual urine, the catarrhal difficulties, which extend up the

urethra to the kidneys, all have a tendency to undermine the constitution of the man, making him a subject for commiseration and one of marked interest to the profession. The ingenuity of surgeons has been well taxed in their efforts to relieve so annoying and many times fatal a difficulty.

Bottini's treatment has been sufficiently tested to show that it is not always a safe procedure and that fatal results follow at times when applied by the most skilled hands. The results, however, warrant the application of the method, for a good percentage of recoveries follow and many are ready to extol a treatment which has given such marked relief and produced so many cures.

Prostatectomy, in my opinion, is the only *surgical* procedure to be undertaken for the radical cure of these difficulties. The enucleation of the gland from its capsule is not a procedure wherein great danger is involved, and the relief and results following the operation have given the greatest satisfaction to surgeons. I am not prepared to state that every case of hypertrophied prostate—the far advanced, for instance—can be reduced to its normal size by the medicated galvanic treatment, yet it should be tried. The earlier condition, however, of enlarged prostate is that of hyperplasia and absorbable, and it is just this stage of change wherein I wish to recommend this medicate galvanic current.

I regret not having had any experience which will justify my bringing this subject before this distinguished body of surgeons and physicians, but reasoning by analogy and knowing by quite an extensive experience the effects of galvanism on tissue of this sort I do not hesitate to do so. The results of an *operation* by either method now used, although giving relief, yet has its unpleasant, destructive effects otherwise on the sexual apparatus. It is for this reason that the medicated galvanic current should be tested in the first instance.

The two following methods may be tried: The first one is by placing the positive pole over the sacrum and the negative over the perineum. The surer and possibly better method would be to place a covered positive electrode in the rectum, by the aid of a speculum, the negative pole or urethral electrode being placed in the prostatic portion of the urethra. By this latter method a very weak current should be used, similar to that by Newman's method for urethral stricture, namely, about ten milliamperes for an interval of five minutes.

This treatment was suggested by me about a year ago to a physician, which he used in case of himself with marked relief. Within six weeks I have been permitted to try it, using the negative electrode in the prostatic portion of the urethra and although only one treatment was given the relief was most satisfactory. Before the treatment it was with difficulty that a small catheter, No. 8, was passed; now it can be done with the greatest of ease, thus giving proof of the absorption of hypertrophied tissue, which must have taken place.

Gentlemen, although I have not presented a long, clinical report in connection with the various difficulties alluded to in this paper, the cases from which I have deduced my theories have been carefully watched and a sufficient time has elapsed to lead me to the conclusion that before heroic surgical measures are used nothing would be lost by testing the measures for relief herein set forth. More satisfactory results *might* be obtained by carefully undertaking a treatment, which, although not absolutely surgical, yet when favorable results were obtained and no anatomical deformity followed would prove immensely satisfactory both to patient and to surgeon. There are times when the knife cannot be used too quickly, nor too heroically to prevent the invasion of pathological processes, or malignant disease into tissues beyond the reach of human aid. There are times, also, when we can afford to defer, and carefully and in a painstaking manner, give the patient the full benefit of the doubt, and in a certain per cent. of cases obtain results more gratifying than by surgical methods.

Let us, therefore, be liberal and generous toward each other in our common efforts to relieve suffering humanity of its many direful maladies.

Discussion.

DR. B. G. CARLETON.—The excellent paper presented by General Terry, which is to be commended not only for its practical application of electricity in medicine but also for its suggestive scope, has been of much interest and profit.

I have had but little personal experience with the galvanic current as a curative agent in the treatment of prostatic hypertrophy and the train of concomitant conditions which it may produce. In a few cases of prostatic hypertrophy a varying degree of relief has been obtained by the use of the galvanic current applied through the rectum by means of the King rectal electrode. I have had no experience with it combined with iodine though occasionally good results have been obtained by the internal administration of this drug.

Dr. Terry reports a case which improved under the use of the galvanic current applied by means of the Neuman sound. This method of treatment of urethral stricture has many recorded cures, but from my personal experience I am of the opinion that while relief may follow, it is as much due to the dilatation as to the galvanism. I have, unfortunately, had many patients who said they had been cured of urethral stricture by this method in whom an examination revealed pronounced urethral stricture requiring urethrotomy for relief. I therefore cannot but think that the electrolysis was either improperly applied or the method was a failure, the latter being the consensus of opinion of the genito-urinary surgeons of to-day.

In regard to the early treatment of prostatic hypertrophy, each case must be individualized. In my experience the early vesical discomfort, etc., may often be relieved and instrumental intervention postponed by the administration of the indicated remedy. Picric acid has been found useful when there was residual urine with frequent calls to urinate, especially at night, accompanied by its characteristic genital symptoms; mercurous corrosivus, when rectal symptoms predominate, straining both with micturition and at stool accompanied with some prolapse of the rectal mucous membrane, the symptoms all due, naturally, to the congestion of the genito-rectal organs; triticum repens has been found useful to relieve the burning and tenesmus and the crawling, itching sensation in the prostatic urethra; phaseolus nana in cases accompanied with hematuria; chimophilla, when the urine was loaded with a copious, muco-purulent or bloody sediment, sometimes with dragging pains in the prostatic region and loins; sabal serrulata sometimes acts well in elderly people of deficient sexual and mental vigor and with dull or sharp pains in the prostate, testicle or spermatic cord; it acts by relieving the congestion in these parts. Stigmata madis, arnica, esculus, buchu, lycopodium, ferrum phos., causticum, sulphur and nux vomica are found beneficial as symptomatically indicated. When these remedies do not give the necessary relief the introduction of a full size, coni-

cal steel sound under proper aseptic and gentle methods, every week or ten days may be useful. In some cases deep urethral injections of 10-30 minims of a solution of silver nitrate, 1-10,000-500, may be beneficial. In all cases careful uro-genital hygiene must be advised and scrupulously followed.

Some cases should be operated by the Bottini method of incision which consists in burning one or more grooves by means of the actual cautery through the obstructing prostatic mass, lowering the vesical dam and allowing of proper evacuation of the bladder. This method is indicated when there is pronounced hypertrophy of the fibrous tissue composing the organ.

In 70 cases operated, I have had 4 deaths, 1 failure and the balance cured or greatly relieved. This operation, however, while it has a low death rate—about 6 per cent.—and a large percentage of cures, is not free from danger, death having occurred from perforation of the superior wall of the bladder neck in a case where intestinal adhesions were present, also from extravasation of urine, or perineal abscess from injury to the membranous urethra or perforation of the posterior wall of the bladder due to a paracystitis, proctitis or seminal vesiculitis, from toxemia through opening a pus pocket, abscess of the prostate, thrombosis of the lungs from blood clots, suppurative epididymo-orchitis, etc. This treatment however has much opposition.

When the glandular or muscular elements predominate a prostatectomy may be performed. If there is special enlargement or pedunculation of the so-called middle lobe, the Fuller method is usually advisable, *i. e.*, a suprapubic cystotomy and removal of the growth from above; other cases, however, are best enucleated by the Alexander method.

The conceded death rate for prostatectomy, however, is 15-18 per cent., my own being 20 per cent. If the patient escapes a urinary fistula or death from operation, the final results in the successful cases are very satisfactory. Prostatectomy, however, is contraindicated when there is present evidence of arterio-sclerosis with polyuria, cardiac hypertrophy with an advanced atheromatous condition of the arteries.

Therefore, in some cases it is better to depend upon catheterization for relief, even though it is accomplished with many dangers from improper instrumentation and germ invasion.

Dr. William Harvey King.—I have listened with much pleasure to the admirable paper by our esteemed colleague, General Terry. The suggestion to use the positive pole over the sacrum and negative over the uterus at the end of the *seance* in treating uterine fibroids I have never seen mentioned in medical literature. It was a suggestion of Gautier, a great rival of Apostoli who claimed it would relieve the backache, but owing to Apostoli's enmity he would not only never use, but never advise this procedure. I am glad that Dr. Terry has made this observation and found it of value. I don't know just what cases of uterine fibroids are benefited by electricity, though I have given hundreds of treatments. Electricity will modify the symptoms, and in a certain number of cases will produce shrinkage of the tumor. Would like General Terry to indicate the class of cases he has benefited.

Dr. Wm. H. Diefenbach.—The excellent paper of General Terry is so much in harmony with the teachings of progressive electro-therapeutics that nothing but encomium can be bestowed upon its distinguished author for his timely emphasis and endorsement of the value of cataphoric medication in selected cases.

The methods cited have proven efficient in many instances and their adoption by the medical profession at large is merely a question of time.

Diffusion of iodine by means of the galvanic current has, however, not always been efficacious in enlarged glands, especially when the hyperplasia is hard and fibrous in character. The iodine medication seems to be most successful in pure adenoid or glandular enlargement. In the study of the physiological properties of ichthyol coincident with a proving of this drug, its physiological action indicated that it might prove efficacious in fibrous deposits and hyperplasias when iodine was ineffectual.

While my experience with ichthyol diffusion by means of galvanism has not been very extensive, I have found it to act very well in ankylosed joints and for the relief of contracted muscles and tendons following fractures. It is also beneficial in congestions and synovial inflammations.

Ichthyol anaphoresis was also successfully employed in a recent case of erysipelas. It checked the spreading promptly and cured the attack within one week. As ichthyol is an efficient antiseptic, its action in erysipelas is readily explained. The advantage of using galvanic diffusion instead of simply painting the lesion rests in the fact that the remedy can be carried deeply into the tissues and as the lymphatics are supposed to be the principal seat of the streptococcic invasion in erysipelas we are able to reach the root of the evil. It seems to me that this method is preferable to the carbolic acid treatment now in vogue, especially as the texture of the skin is not destroyed and there is no pain connected with it.

Ichthyol acts like iodine in that it is best applied by means of the negative galvanic pole, the positive being placed at an indifferent station such as the sternum, nape of the neck, etc. I usually employ it in a 20-per-cent. solution.

The diffusion of medicines by means of electric currents offers a great field for further experimentation and in cases where remedies cannot be given in the customary way this method offers a ready medium for the transmission of the remedy to the point required.

Local anesthesia with cocaine can be induced by means of cataphoresis and mercuric cataphoresis has been advocated in specific cases for some time.

THE DIAGNOSIS BETWEEN SPECIFIC TONSILLITIS AND DIPHTHERIA.

BY A. N. ELLIS, M.D., PHILADELPHIA.

THE patient who presents this question was a woman, an American, white, married, 34 years old, and a housekeeper by occupation. She was admitted to the hospital on the first of the month. Her history is negative; in her family history, her mother had asthma prior to death, which took place at the age of 22 years in consequence of childbirth; her father had articular rheumatism. Personally she had the measles, mumps, chicken-pox early in life; three attacks of pneumonia, one attack six years ago, and one three years ago, and one in November, 1900. Six years ago she also had malaria. She has had three children and no miscarriages.

Four weeks ago this woman had a sudden attack of arthritis n ithe right elbow; at least I gather that there was a history of pain and swelling at this point, the pain being excruciating. When I was called in to attend her two weeks before she was admitted to the hospital I found that she had developed a sore throat which still continues in a mild form. It began with a sense

of rawness and difficulty in swallowing until a few days before admission when it grew worse, becoming so painful that she could not talk nor swallow. All these symptoms were attended with headache, loss of appetite, and malaise. She has had considerable leucorrhea. On admission temperature was 102, pulse 96, moderate reduction in hemaglobin 82 per cent., red cells, 5,240,000, white cells, 12,780. Examination of the lungs negative, low pitched murmur in the systolic, at the apex, transmitted; soft murmur in the pulmonary or aortic area; both tonsils enlarged in volume follicles distended due to the exudate. Forty-eight hours after admission there was some ulceration over the tonsil and the leucocytes diminished and the fever has continued, although it is gradually reduced, and now we are really face to face with the problem, which to me is extraordinary; that is, whether this patient has ulceration of the tonsils without any membranes.

We cannot account for this eruption on the face, which has been there since she was 14 years of age. It is an exanthemata, squamous, scaly, and dark. It has nothing however to do with the affection of to-day. The throat is so much better that I have brought her before you. I want to have you hear her voice, and then I want you to consider for a moment a few questions that came to my mind in regard to the ulceration; there is no possibility of finding a cleft lip there; there has never been any membrane and ulcer there. We had her out of the ward for a week or two, but there was no diphtheria there; there was ulcer on both sides. One thing made me suspicious, however, and that was the eruptions and the difficulty of swallowing. On physical examination you find the lymphatics very marked; some eruption on the spine, a little on the dorsum of the hand and about the wrist. That on the wrists is paling. The arm at soulder hurt when turned in a certain way. Pain is greatest at night-time, right on the circumflex nerve. With the cultures negative and the sluggish course of the disease and the presence of the fever, and when we get the history of primary infection, and the occurrence of the bad leucorrhea, I made up my mind as to the character of the ulceration, because of the fever throughout the course, though mild in degree, because of the indefinite nature of the eruption and because of the secondary enlargement of the lymphatics, I thought this was an ulceration specific in origin. I am not satisfied with the report of a few days ago, for I am so earnestly a supporter of the evidence from the clinical laboratory that I do not want to go behind the report of that. The clinical course of the disease is certainly not that of diphtheria. The throat was examined by the laryngologist, and there was nothing but ulceration of tonsils, as you see. I did not lay much stress upon the eruption because of the history, as she has had it since she was 14 years of age. She is married, had children and no miscarriages. The peculiar eruption on the inner side of knee; it was copper colored; it seems to be more of a pigmentation than an eruption. But independent of the eruption, I think we are to make the diagnosis, as I have, of a specific infection, for the reasons I have given you: the chronic ulceration of the tonsils, enlargement of the glands, and persistence of the fever, and such infection is not incompatible with the fact that there was enlargement of the elbow-joint in the beginning, and then the involvement of the knee-joint. This being so, independent of any rise of temperature, it is not an active process. The fever I consider one of the most important symptoms of the infection. It is not likely that any other infection would have such a prolonged febrile range as that was here. Three affections are possible: There was the streptococci in the throat; that there might be a sore throat, an affection that may continue fifteen days without any relief. It is hardly likely, and I think it can well be cut out of the question. You hint that we have associated with rheumatism and affection of the fauces and of the tonsils which has a sudden onset, a follicular tonsillitis, if you please, involving the follicles, favoring the enlargement of the tonsils. The course of the eruption is from five to ten days; but it has subsided entirely and with a relief, even though it is associated with the joint symptoms. With regard to the urine, nothing suggests it at all; no urates; nothing in the urine to suggest any rheumatic process; I mean any process causing rheumatic fever. On the other hand, as to tonsilitis and rheumatic fever, it is remarkable how quick they come. You may see from day to day persons taken with tonsillitis; after the tonsillitis subsides inflammation of the serous membranes, pericarditis, endocarditis and not rarely meningitis with death resulting. In such general affections I have never seen the urine without albumin. In other cases of tonsillitis there are almost always traces of albumin. I have never seen the urine free from albumin. There is the febrile urine; albuminuria due to acute nephritis; the nephritic process is present. Then again the urates are thrown down and passed in large amounts, which is not more likely than casts of urates. The temperature never above 102, and this then has ranged from 101, and often less. This suggests another affection. The temperature has not been above 101, and for at least three days it ranged about 100. Then there is inflammation of the nerves, the circumflex nerve, neuritis, which is secondary. The eruption is indefinite in character, and indefinite in the history of the development. It seems to me we here have a specific infection, which requires at once active general and local treatment.

Now let us consider what might be present. The glandular enlargement could not be general. We find it in the groin, in the gluteal region. If we found them in the neck they would be more marked. There have been no local appearances at any time of diphtheria. First, the tonsillitis is of a local character. There is no reason why this patient might not have taken over again an acute tonsillitis, soon afterwards the appearance of the acute inflammation which was rooted in her system. If I were theorizing, I might say that we have here Louis's primary manifestations. We are now beginning to classify or to consider this affection without any first stage, second stage, or tertiary stage. A great cerebral disturbance may occur in a month, so that those who are well-versed, who studied this infection, are putting aside these second and third stages in a very large degree.

The treatment of course depends upon the diagnosis. Admitting in a measure the difficulty of what is to you a troublesome theory in private proctice. I have in mind the case of a young woman who returned from her wedding tour with a severe adentitis, which was growing so painful it was thought best to operate, and the surgeon cut out a number of glands. I saw her with her tonsils just in the acute stage. She had gone through a most typical course of syphillitic infection, running now over two years. I simply made it my business to see that she got well, and attempted disinfection without the use of mercurials. It was very interesting to note how her blood came up as we kept her on tonic doses. Another case, was one in which the nose and tibia were affected, and I think the characteristics of the infection were in

her head. At first she considered it to be a nasal trouble, and she was cauterized and treated locally for quite a time; then treated for rheumatism, but without any success; and when I had the first opportunity of seeing her, the disease was nasal, one or two places on the tibia. With her there was an extraordinary degree in the rapid development. In accordance with our original plan the treatment was based on the diagnosis; that is to say we all recognized at once that we had a disease of a specific character to deal with. The better way to administer mercurials in these cases is by inunction. I am satisfied that in this way we can get a good and rapid effect of the mercurial; it is the sublimation cure, an absorption through the skin in that manner.

We feel that in that way we can get a rapid effect and sufficient. Especially rub it in the skin every other day until you get the desired effect. Mercury administered in this way need not, however, if we do not want to excite salivation and may not be in a hurry, when we may give it by the mouth. It may be given in the form of the protiodide, in one grain doses three times daily, in combination with quinine, which prevents the salivation. It may be given in one-fifth or one-quarter grain doses with good effect. Be sure to get a laxative effect. I also use ½ grain of extract of hyoscyamus three times daily; the extract of opium three times a day. The inunction will bring about the quickest and the best results, and I will keep up using it until I get the desired effect, keeping a watch on the teeth, so as to avoid salivation. As to mouth washes, a solution of boracic acid used freely in the mouth is of the very greatest importance to prevent this effect; as it is important to keep the teeth and mouth perfectly clean. The fauces must here be treated by the use of the swab or gargle. The tincture of cinchona is a very good wash, and apply it by swabbing the tonsils with one half water; or used instead a teaspoonful in half a glass of water as a gargle.

Other good gargles are the chlorate of potassium, 10 grains to the ounce of the infusion of smilax. A good formula is tinct. of iron, 1 drachm, glycerine, 1 ounce, in water sufficient to make one-fourth glass, and every two or three hours use as a gargle. Use sufficient to cleanse the parts, and then make application of bichromate of mercury. Cleanse with spray; at same time I have patient gargle with it. After the parts are thoroughly cleansed then make the direct application of one of the mercurial preparations. Sometimes I add something to the mercury to stimulate, as a solution of the nitrate of silver. Another preparation is iodoform in emulsion, four ounces of the emulsion to the ounce of acacia. This may be employed by the operator, but it does not do a great deal of good. Have patient to avoid swallowing water for a time so as to keep it close to the fauces. If the emulsion of iodoform is objectionable and the patient would want to give it up, apply it by a brush or as a gargle, and in that way it relieves the influx to a wonderful degree; it also relieves the pain. When I see the necessity for it, I write a prescription, and get a good result. How difficult these cases are to manage. One must bear in mind the great difficulty in diagnosis; also the serious problems that occur. I have two cases now which are in doubt, as to whether they are specific or tuberculosis. It is a very difficult problem to decide. I used to be averse to sending to warmer climates. It is curious how these patients will hold up. I had a case in my office to-day where tuberculosis existed for several years. I want to have cultures made of this patient again, because of the fever, because of the urethritis, because of the eruption, because of the glandular involvement, because of the characteristic involvement of the tonsils, and because of the pain which is represented to be in the course of the circumflex nerve, as it will extend to other branches of the brachial plexus. Notwithstanding that the blood shows a high red count, she has anemic murmurs. The anemia will develop in these cases, and we can get rid of the anemia by the use of the mercurials.

VOMITING IN PREGNANCY.

BY O. M. BOURLAND, M.D., OF VAN BUREN, ARK.

IN early pregnancy, morning vomiting which usually follows taking of food is a normal condition. This I shall designate the benign form.

If by its persistence and increasing frequency it prevents proper alimentation, causes great emaciation and weakness, it becomes what may well be called the grave form.

And if it proves to be rebellious to all treatment short of removing from the uterus the *fons et origo* of the trouble, this condition I shall designate the uncontrollable form. The conditions which enter into its etiology are manifold.

We see cases, without discoverable lesion, in which, as soon as the impregnated ovum finds lodgment in the uterus or tube, vomiting begins. It may be a few days or it may be a few weeks after impregnation. This nausea and vomiting may continue despite all our efforts to correct it until the uterus is emptied, when immediate relief follows.

It seems probable that the increased vascular supply to the uterus, and the decreased vascular supply to the brain, together with its concomitant nervous disturbance, afford us the only explanation of this condition in the present state of our knowledge.

If we can find a malposition, erosion or other diseased condition of the uterus or of its neighboring organs, we think we have here the complicating conditions towards which we should especially direct our treatment. Real pathological changes in the cervix will likely preclude the possibility of the completion of gestation. The severity of the vomiting, however, is usually out of proportion to the discoverable lesion or lesions, as the case may be.

I have seen a small ulcer situated on the os, produce for a week almost continuous nausea and vomiting, which was immediately relieved after cauterization. My experience has been that women of a nervous temperament, and those who vomit with facility under other conditions, have most trouble with the stomach during pregnancy. And while vomiting of pregnancy is usually of a reflex nature, the stimulus from the growing ovum exciting through the uterine plexus the center of which controls vomiting—nevertheless, microscopic changes of the stomach are sometimes found in cases resulting fatally from vomiting of pregnancy.

The lesions of the stomach may have been pre-existent; or the lesions may have been produced by the continued stomach derangement. In vomiting of pregnancy there seems to be a sort of gravidic auto-intoxication which acts mechanically by changes taking place in the uterus, and reflexly through the vomiting center.

All vomiting presupposes the existence of a vomiting center, which is situated in the floor of the fourth ventricle.

Excitation of this center causes an excitation of the parietal phrenic, and pneumogastric nerves, which supply the abdominal muscles, the diaphragm, and the

stomach and esophagus, which muscles are directly concerned in the act of vomiting. The excitation of this center may be of central origin as by a blood clot or neoplasm.

It may be due to the presence in the blood of some toxic emetic substance, or to some local excitation remote from vomiting center.

Among the causes of vomiting which continue to be of especial interest are the well known, but not well understood, psychic influences. Simply the thought of loathsome objects in those persons who vomit with facility will produce it. I have now under my care a lady suffering from uterine cancer, who frequently vomits at the thought of taking food. This is one of the many conditions we meet, which impress upon us the thought that we are fearfully and wonderfully made.

In the benign form of vomiting of pregnancy, attention to diet, proper physical exercise, and where there is pyrosis, alkaline treatment is usually all that is needed. Sometimes anti-emetics, such as cerium oxalate and bismuth sub-nitrate, are valuable. In the grave form, vomiting persists and increases in frequency, until the patient is greatly emaciated and weakened.

In many of these cases, the interdiction of solid food, the use of anti-emetic medicines and such other treatment as may be indicated, such as the correction of displacements, etc., together with regulation of the bowels, and last but not least, the regulation of the patient's physical exercise and the maintenance as far as possible of cheerful surroundings, will bring about relief. A voyage, the satisfaction of a desire for certain articles of diet, etc., may prove to be more efficacious than medical treatment. In obstinate cases of this form, slight dilatation of the cervix may cure, as was discovered by Copeman, who, in an unsuccessful attempt at emptying the uterus by dilatation, found his patient was relieved by this dilatation alone.

In other cases the reclining posture, with elevation of the hips, controls vomiting. The different forms of pessaries may relieve certain cases. Lavage of the stomach has proven of great value in some cases, but of this treatment I can say nothing from experience. However, I believe it will grow in favor with the medical profession. For what is more reasonable than to give rest to a weakened or offended organ, and if need be, to saddle its work upon some more tractable one. The rectum may very nobly perform this vicarious function for the irritable and rebellious stomach.

If all these means fail the case falls in the category of the uncontrollable form. We should not delay too long the treatment necessary in this form, as delay may result disastrously. If need be, we should unhesitatingly shoulder our manifest responsibility, obtain consultation, and after due consideration of the case do our duty by removing the offending cause.

The first case I wish to report is that of a young woman, 21 years of age, of slight build, delicate appearance, and who has suffered from dysmenorrhea since the first appearance of menstruation. At her menstrual periods she had always suffered with pain in the left side, as well as in the region of the uterus. This condition often led to syncope. She had medical treatment but without any benefit up to the time of her marriage. After this time she came under my care. Upon examination I found the uterus retroflexed and slightly twisted to the left. I advised local treatment, but this advice was not favorably considered, and a trial of gelsemium was resorted to for one month. This treatment rendered the next menstrual period much more tolerable; but after another month's trial of this treatment it was found necessary to resort to instrumental treatment, which was dilatation and curettage. The two periods subsequent to this last treatment were passed without pain; these being the only periods ever passed without pain since the beginning of menstruation. Before the third period after curettage, the patient conceived, and after the first four weeks of pregnancy was troubled with nausea and vomiting at all times of the day.

Alkaline treatment was not of much benefit, but a combination of

℞ Cocaine muriate.....⅛ gr.
Cerium oxalate..... 5 grs.
Bismuth subnitrate.....10 grs.
Elix. simp..... 1 dr.
M.

afforded marked relief. Mellin's Food was well tolerated. The bowels were regulated admirably by the syrup cascara aromatic. At term, the delivery of a vigorous eight-pound boy was accomplished without accident.

The second case, a well developed, large woman, 28 years of age and pregnant for the first time. She had brown spots on skin before and after conception. Vomiting began after the fourth week. Many remedies were used but without any apparent benefit. The vomiting continued, but not severe enough to prevent proper alimentation, throughout the entire period of gestation. This patient found that whiskey helped her and resorted to it daily. After delivery, the babe was found to be extremely fond of whiskey. This desire was probably engendered while *in utero*. If such was the case it should teach us to proscribe the use of strong stimulants except under extraordinary conditions.

Case third, a delicate woman, age 46, pregnant for the eighth time. Was not troubled much during the first few months, but at the seventh month it became necessary to resort to an exclusively liquid diet. Milk with Maltine was at times all that could be retained. The anti-emetics at times allayed the stomachic irritation, and at other times were valueless. About the middle of the eighth month bronchitis developed, with severe pain in the shoulder. Owing to the irritable condition of the stomach heroin was selected to allay pain and cough. It was well tolerated by the stomach. I have used heroin in doses beginning with $^1/_{10}$ grs. and increased to ⅓ grs., with excellent effect in a case of uterine cancer in which neither morphia nor codein could be tolerated by the stomach.

Case fourth, wife of a physician, 22 years of age; second pregnancy. There was some vomiting before the sixth week, but at this time it became more persistent, and after several weeks the patient became very weak and maciated. At this time I was called in consultation. No drug seemed to have had any effect on the vomiting. Finally, after consultation by three physicians, dilatation of the cervix was tried, without any effect. After a few days it was deemed necessary to empty the uterus. Dilatation and curettage was resorted to. The fetus removed was about four inches in length. After this, under strict dietary restrictions, there was no further trouble with the stomach, and the patient made an uninterrupted recovery.

—Thomas R. Brown and Howard A. Kelly, after using a combination of nitrous oxide and ether as an anesthetic in over 200 cases, strongly recommend it to the profession. Hewitt, Le Breton, Galloway, Bird and others have tried this combination and are impressed with its advantages.

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"We ought not to deceive ourselves or each other in regard to the present condition of medical science. Unmistakably, medical men are sick of the large number of new hypothetical systems which are thrown aside as rubbish only to be replaced by similar ones. We shall soon see that observation and experiments only have permanent value. Then, not as the outgrowth of personal enthusiasm, but as the result of the labors of many close investigators, pathological physiology will find its sphere. It will prove the fortress of scientific medicine, the outworks of which are pathological anatomy and clinical research."—RUDOLF VIRCHOW.

MEDICAL DEPARTMENT OF THE UNITED STATES ARMY.

THERE are probably no better educated men in our profession than are found in the army and navy. The examinations require a high grade of scholarship not only in general science but in the different department of our profession. The thoroughness of the examinations may be seen from the fact that of the 1118 young physicians who appeared for examination before the various army boards from 1889 to 1901 inclusive, only 187 were approved. From a recent article by Dr. Munson, of the Surgeon-General's office, we gather some interesting facts. Each vacancy in the department is filled by appointment as assistant surgeon with the rank of first lieutenant. An assistant surgeon mounted—receives $1,600 per annum. At the end of five years, on examination, he is promoted to captain and receives $2,000 a year, with an addition of 5 per cent. for the next five years. After ten years service as captain he receives $2,400 a year. The pay attached to the rank of major, $2,500 a year, which with 10 per cent. added for each five years' service becomes $3,000 after ten years service, and $3,500 after twenty years. Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty or after forty years service, and are placed on the retired list at sixty-four years. Retired officers receive three-fourths of their pay proper at the time of their retirement. In case of death due to causes incident to the service a pension is granted by the government to the dependent members of the family. In addition to their pay proper officers are furnished with a liberal allowance for quarters, and when traveling a free transportation and a mileage of seven cents per mile. Well selected professional libraries are supplied to each hospital, by which the medical officers are kept fully abreast of professional advancement. In addition, twenty-two medical journals are circulated among all prominent military posts. Any special works desired by medical officers can be obtained by request from the library of the surgeon-general's office. It will be seen that while the medical officer will never become rich, not only himself but his family will always receive a comfortable support. The medical work of the army is at present being performed by a total of 736 physicians, of whom 260 belong to the regular medical department; 200 are commissioned officers of volunteers, serving under temporary appointment, and 276 are civilian physicians serving temporary appointment under contract. They are assisted by the enlisted men of the Hospital Corps, numbering about 4,000. Special nursing in some of the larger hospitals is done by the army nurse corps of female nurses, of whom 125 are now in service. This vast medical force is scattered at more than 400 military hospitals, varying in size from six to 1,000 beds, at army posts all over the United States, above the Arctic Circle in Alaska, below the tropics in the West Indies and Philippine Islands, and with the legation guard in China. In 1901 it had the care of a total of 232,080 admissions to sick report, of which 19,702 were for injuries. It also performed a large number of surgical operations; as one of them in this respect, it may be mentioned that there were 336 operations for the radical cure of hernia in the above year.

The library of the Surgeon-General's office is probably the largest medical library in the world, and contained in 1901 145,000 bound volumes, besides the large number of pamphlets and journals. The museum contained no less than 35,000 specimens of all kinds, many of them representing pathological conditions. The library and museum are open to the general profession and furnish an inexhaustible fund of information on special subjects. A portion of the library-museum building is devoted to laboratory work under skilled chemists and microscopists. Similarly equipped laboratories are also maintained in Manila and Havana for bacteriological and other special investigations into the causes of disease. In these laboratories since the war with Spain medical officers have discovered the means of transmission of yellow fever and the measures necessary to remove it from an infected locality; have found the cause of the fatal anemia of Porto Rico which carried off many thousands of lives until it was shown to be chiefly due to ankylostomiasis, and as such curable by the use of thymol and a cathartic; have established the fact that

Malta fever exists in the West Indies and the Philippines; have identified surra as a fatal disease destroying animals in the Philippines, and dscovered it was propagated by a biting fly; have investigated the animal parasites so common to the Philippine Islands; have studied tropical dysentery and have found it to be largely due to a specific bacillus, and by investigations have contributed largely to our knowledge of plague. Notwithstanding so much has been accomplished by the medical department of the army and navy, it will be seen that if a proportion of the duties of the Surgeon-Generals were delegated to a health dpartment, the head of which should be a cabinet officer, a much wider influence could be exerted and much more could be accomplished for the prevention of disease and the development of the health and strength of the nation.

SHALL WE HAVE A DOUBLE SCHOOL SYSTEM?

THE rapidly increasing demands of medical education, within and previous to the medical course, have brought up the question as to whether it is desirable to postpone the entrance upon life work much beyond the attainment of manhood, and how, if it is thought best that the earnest of life should begin as early as possible, the student may fulfill the various requirements and still be an active worker before he has passed a third or more of his life.

The problem is a broader one than at first appears to one who has been especially interested in medical education, applying at least to medicine, law and the ministry and to the higher branches of pedagogy. Following the ordinary course of American education, the average student leaves the grammar school at fourteen, the high school at eighteen, the college at twenty-two, and the professional school at twenty-six, for medicine and theology, and a year or two earlier for law, pharmacy and dentistry. Teachers either take a normal course which supplants that in college, or, without any definite requirements, spend a year or two in post graduate study to fit themselves for the highest grades of work. The physician, however, needs a year of hospital or similar practical training, after having fulfiilled the highest didactic requirements.

The problem is very easily solved by omitting part of the preliminary study and, for certain professions, there seems no serious objection to this simple means of economizing time. In regard to medicine it is difficult to say just how necessary a college training is. Generally speaking, the large majority of "successful" physicians have enjoyed this privilege, but success depends on many other factors than intrinsic merit and, as in regard to all vocations, we must recognize the fact that many individuals can acquire a liberal education by their personal exertions outside of any formal educational system, while others gain neither common sense nor true culture under the best system of instruction. We have no sympathy with the view that a man's practical value to the world is spoiled by giving him a good education. There are, it is true, numerous apparent illustrations of this view, but we are inclined to think that the man who would be spoiled by going to college would be spoiled by some other circumstances of life. Thus, the man who manifests a silly and superficial pride in possessing a college degree would probably show the same weakness on account of the possession of a few dollars, or a good horse or a hyphenated name. Any reverse of fortune that deprived him of any of these possessions might be the making of him, by teaching the true standard of human value, but it is fallacious to argue that the education in itself has done him harm.

Medicine is an art that is progressing so rapidly toward the state of a science that anything that enables a man to grow and to grasp underlying principles of growth is of greater value than the mere possession of technical information, which can represent nothing but the present status of medicine. It is easy to see that a broad foundation in biology and natural philosophy is of assistance in mastering a science which is based mainly on these branches. The classic languages are a key to the technical nomenclature, while the usefulness of the modern languages, especially French and German, and of a free command of English construction, is self-evident. Education along other lines is, at most, of general value as a sort of mental gymnastics, and of use in adding to the prestige of the individual and, hence, of the profession.

To a large degree, one must be influenced by conditions and not theories. All of the leading states now require, as a minimum, a high school education, and several of the leading universities require from half to the entire college course as a preliminary to medical matriculation, or, at least, to graduation. With the economic demand to limit membership to the medical profession, so as to allow a fair clientele to each practitioner, it is inconceivable that the progressive raising of the educational standard shall stop short of the requirement of a college education by the prominent colleges and medical schools within the near future.

One might argue, pro and contra, for a week, and still the opinion as to the proper age for beginning one's life work, in medicine or any other profession, would remain a matter of personal judgment. Our own impression is that of the late William Pepper's, that "that system of education is a mistake, which does not allow the young man of fair ability to enter upon his life-work by the time he is twenty-two or three," and the present outlook is that, without marked economy of time in education, the man who complies generously with the spirit of the present laws can not begin to practice medicine till he is twenty-seven, and, in the existing state of affairs, he will not be self-supporting till he is thirty.

There are two ways of economizing time. One we have recently discussed—the combination college and medical course which recognizes that many subjects can be applied with equal propriety to both courses, so that the bachelor's and the medical degree, may be

earned in six or, at most, seven years. By this expedient, the age for entry upon life work may be reduced to twenty-five or six for the physician and correspondingly for certain other professions by similar combination courses.

The general opinion of educators is that the high school and college courses cannot be materially shortened, although both economy and the advantage of extending educational opportunities to the greatest number suggest that the former course may be lengthened at the expense of the latter.

It is in the grammar schools that we must look for any additional economy of time. The subjects taught are, for the most part, those needed and constantly used in ordinary life and reviewed in all subsequent studies. By the time the high school is reached, there has been a gradual weeding out of pupils—scarcely half of the graduates of the grammar school entering the high school—till most of those remaining are of such circumstances and inclinations that they are fairly well matched as to the possibilities of home education and ability, The grammar schools, as at present conducted, present far different conditions. In the primary grades some pupils are sent merely to get rid of them, their parents caring and helping to no appreciable degree with regard to their mental development. Some already have a good command of the English language, consisting in the fairly correct use of several thousand words; others are unfamiliar with the ideas and objects which the more fortunate have learned to recognize as a matter of daily association, and are either in the habit of using the English language incorrectly or not at all, and, in most such instances, the familiarity with a foreign language is not of a degree and kind to be of material assistance in their further education. Some children have been trained, even at an exceedingly arly age, in habits of accurate observation and to regard education as their present life work. Others have been taught, in the kindergarten, that it is a matter of amusement; still others, at home, that it is something required by law, but of no importance, and to be pursued only till some more profitable employment is to be found. As the children grow in years and advance from grade to grade, differences of ability and inclination manifest themselves. For practical educational purposes, too, we must recognize the un-American fact that some are destined to professional or higher business careers which demand the prolongation of student life up to the period of maturity, while others, of humbler ambition, will scarcely find occasion to use the three R's. From the standpoint of economy of time, it is absurd to insist that all children shall spend nine years in the grammar school. But with the present graded system it is impossible to save time except by making up a whole year's work in a single vacation, and this is a task of the utmost danger to physical and nervous health. What is needed is a short course, presupposing a knowledge of the letters, numerals, the ability to tell the time from a clock and to read simple words. From this starting point bright pupils, especially such as will learn something of history, geography, and the use of language, at home or in travels, can easily be brought to the high school in six years, or by the age of twelve, instead of in nine years from the age of five. It would be neither necessary nor wise to recognize publicly the fact that social standing would have an important bearing on the ability of the pupil to take the shorter course. It should be open to all who could show evidence of ability, either at the beginning of or during the course. In case of sickness or inattention, or any other cause, a pupil could be transferred to the slower course and many who could not achieve the high school standard in six years could do so in seven or eight. That such a plan would not overtax pupils of reasonable ability is supported, not by theoretic considerations, but by the actual experience in English public schools—which are not public in the American sense—in which boys of eleven or twelve ordinarily pursue such studies as Latin and Algebra, which are rarely reached in the American curriculum till two or three years later. Allowing a total of ten or eleven years for the high school and combined college and professional course this scheme would enable at least the more fortunate students to become wage earners comparatively early in life and still after a thorough preparation for professional life.

SURGICAL TREATMENT OF CHRONIC BRIGHT'S DISEASE EPILEPSY AND EX-OPHTHALMIC GOITRE.

THE ever broadening range of investigation in therapeutics and surgery shows their close relation and the absolute necessity for the successful surgeon to be familiar with both. It is frequently found that diseases which had heretofore been relegated to the domain of surgery can be more successfully treated in the line of therapeutics, and that the knife of the surgeon will oftentimes bring relief where drugs and hygienic measures have failed,

This is forcibly illustrated in the recent discoveries of Dr. Edebohls, one of the most prominent surgeons in our profession, who claims that chronic Bright's disease is curable by operation, basing his deductions upon observation of cases operated upon for movable kidney. He found that patients afflicted with movable kidney and chronic nephritis at the same time were completely relieved of both by an operation, and therefore drew the conclusion that the displacement of the kidney was responsible for the Bright's disease. His theory of the cure was that the curative effect of the operation upon chronic Bright's disease was brought about by an adhesive inflammation which in establishing collateral circulation supplies the diseased kidney with new blood vessels. Hence, in chronic Bright's disease, even though not produced by renal dislocation, it is only necessary to produce adhesive inflammation with consequent vascular connections by surgical procedure. The beneficial results of Dr. Edebohl's operations have been confirmed

by prominent surgeons. Thus far the literature upon the subject has been small and mostly journalistic. It remains for future investigation to define the real value of surgical procedure in Bright's disease.

Epilepsy and ex-ophthalmic goitre have always been considered the bête noir of our profession, for which thus far no real specific has been found, although frequent relief and sometimes positive cure have resulted from therapeutic agents. The cervical sympathetic was long considered out of the line of practical surgery because of certain changes which would follow the removal of the cervical ganglia. Prof. Thomas Jonnesco, Professor of Surgery at the Royal University of Bucharest, Roumania, in a monograph published in the July number of the *International Clinics*, claims not only to have disproved this theory, but to have established conclusively the beneficial results obtained from operations upon the cervical sympathetic in epilepsy and ex-ophthalmic goitre and glaucoma. During the last five years he says he has performed over 130 bilateral cervical sympathectomies, in the majority of which he has removed the entire cervical sympathetic on both sides, and the smallest operation involved the removal of the superior ganglion, In two cases he removed the first thoracic ganglion which in the living subject has been declared to be anatomically impossible. In none of these cases was there the slightest sign of trophic or circulatory disturbance. Of the patients operated upon, 100 were epileptic, 15 with ex-ophthalmic goitre, 12 with glaucoma, and 2 of migraine. The majority of the 100 patients operated upon for epilepsy were either cured or greatly benefited. Of the 15 patients operated upon for ex-ophthalmic goitre, all were either completely cured or very much improved. Prof. Chipault, of Paris, says that sympathectomy is of great benefit in certain cases of epilepsy and especially in ex-ophthalmic goitre, glaucoma, ophthalmic migraine and spasmodic torticollis, and also in a large number of chronic conditions about the face and head in which the underlying factor is some chronic disturbance of the superficial circulation. Of the 22 cases of glaucoma reported from different countries, there were only two failures. Of course complete restoration of vision cannot be expected, but the relief from pain and the maintenance of the limited amount of vision that existed at the moment of operation and the checking the progress of disease is certainly a great advance in modern ophthalmology. There are two organs greatly affected by irritation of the cervical sympathetic, the eye and the heart. Irritation of the cervical sympathetic causes acceleration of the heart beat. This is not only a prominent symptom of ex-ophthalmic goitre, but also of many of the other manifestations of the disease, especially in the nervous system. To the regulation of the cerebral circulation is probably due to a great extent the benefit obtained by the resection of the cervical sympathetic in epilepsy, ex-ophthalmic goitre, glaucoma, and other troubles of like character which have heretofore been found so difficult to manage by therapeutic treatment. The success thus obtained by surgical treatment in a most difficult class of diseases opens a wide field for thought and careful investigation into the action of different portions of the nervous system which have heretofore been so little understood and the danger of surgical action greatly over-estimated.

ADVANCEMENT IN THE STUDY OF MENTAL DISEASE.

INSANITY is not a disease. To divide it into mania, melancholia and dementia is as wrong as the old-fashioned classification of dropsy into anasarca, ascites and hydrothorax. There is no doubt that the alienist must eventually drop the psychological classification and look for a classification based upon pathological anatomy.

Insanity is simply a symptom produced by various morbid conditions which may arise first in the brain, or secondarily, from diseased conditions of the general system. According to Tuke, ninety per cent. of the cases of insanity are to be referred to eight great classes of causes, as follows: (1) Idiopathic morbid process commencing primarily in the encephalon, produced by overexcitation of the cortex, by sub-acute inflammation and general paralysis and by acute inflammatory action. (2) Traumatic injury. (3) Adventitious productions, tumors, apoplexy, etc. (4) Secondary effects of other neuroses, such as epilepsy, hypochondriasis, hysteria, etc. (5) Concurrent effects on the brain of disease of the general system, such as tuberculosis, syphilis, etc. (6) Poisonous agents. (7) Concurrent effects upon the brain of evolutionary and involuntary conditions such as adolescence, pregnancy, puerperal condition, climacteric and senile degeneration. (8) Heredity.

Some of these causes produce demonstrable change in the tissue, for example, inflammation, hyperemia from over excitation, traumatism and adventitious products, epilepsy, syphilis, toxic agents and senile degeneration all produce changes in the various sensual constituents.

According to Tuke, acute cases of insanity should not be treated in insane asylums, but in general hospitals supplied with trained nurses, staff of general physicians and surgeons, in fact, treated like ordinarily sick people. This same phase was taken up by Weir Mitchell in a recent paper in which he attacked the routine asylum treatment. These papers have had a good effect, and many hospitals for the insane have introduced training schools and modern therapeutic methods. One of the insufficiencies in the asylums for the insane, as a rule, is the gynecological side. Undoubtedly the ailments of insane women do not attract sufficient attention in a large lunatic asylum. This is also true of the oculist, aurist, neurologist and dentist. In hospitals where this line of treatment is carried out, especially in those of Belgium, it has been found that from 40 to 45 per cent. of all insane patients admitted are eventually cured.

The question of the successful treatment of insane patients falls, after all, upon the general practitioner, for he is the one who sees the case at a time when a cure is possible; therefore, it is the duty of the general practitioner to perfect himself in the knowledge of all mental diseases, for the period of cure is usually a brief one. It may be as short as a few weeks or months at the most.

There is in Belgium a curious colony at Gheel which has been for 800 years a resort for lunatics. This district is about seven miles square and devoted to the care of the insane. Nearly all the patients are distributed among the families of the cottages in this district numbering about 1,700 in all, while the sane population is 11,000. Despite this, the moral environments of Gheel do not seem to be of the best, for there are a number of saloons throughout, about one to fifty of the male population, but the selling of liquor to patients is prohibited. The patients are distributed out to the cottagers, pay being classified according to the habits of the patients. For a quiet and clean patient they receive 84 centimes a day, for a dirty patient 94 centimes, and for a dirty and troublesome patient 1.10 francs. The patients, when first sent to this district are kept in the Infirmary for a week or so and then distributed to the cottagers, but should they be taken sick they are sent back to the Infirmary, which has accommodations for about 80 patients.

It is well known that brain tumor is sooner or later fatal to its owner unless removed by surgical interference. On this account every sign which aids in the diagnosis and the location of the tumor is of tremendous value. Frequently the growth is sub-cortical or infiltrating and the incision must, therefore, be closed without the removal of the tumor.

Schmidt has reported a new sign of cerebral tumor. He has reported two cases in which the growth was situated in one cerebral lobe and produced vomiting, vertigo and running in the ears when the patient laid on the opposite side of the body, and he believed that the symptoms were produced by the fact that the Aqueduct of Sylvius or the vena magna Galeni was compressed. Unfortunately, as yet, the Roentgen Rays have not been of especial value in the diagnosis of intra-cranial tumors, although Church has reported a case in which a cerebellal tumor was located during life by its agency. As our methods improve more satisfactory results may be reported.

Surgeons are not as hopeful in operations for brain tumors as they were five years ago. For example, Spiller believes that only the most carefully selected cases may hope for very much from surgical interference, and that operation is justifiable only when the case would otherwise certainly end fatally.

In the matter of head injuries, La Place believes that all cases of injury to the skull are dangerous until the contrary is proved, and symptoms need not develop at once after the traumatism. All cases should be kept under observation for some time until assured that symptoms were not overlooked. For example, a fracture of the inner table of the skull may occur without any evidence of external fracture and we may diagnose it as a case of cerebral concussion. We must also remember the all important fact that the brain may be injured very greatly and yet suffer but little loss of function. Barritt reports a case which ranks with the famous case of the civil war in which a gun, while being loaded, exploded, and the iron ramrod was driven through a boy's head, entering the head three-quarters of an inch above the center of the left eyebrow and leaving it about the center of the left parietal eminence. The ramrod was found about 14 yards from the spot where the boy fell. At first considerable mental disturbance was noted and paralysis of the right arm, but within six months, Barritt states, the boy seemed to be in perfect health, his mental faculties seemed to be all right and he had practically perfect use of his arm, while his speech had never been impaired.

THE DUTY OF THE MEDICAL PROFESSION IN THE PREVENTION OF DISEASE AND CRIME.

IT costs the country $500,000,000 a year to pay the bills of prisons and crime. The largest proportion of crime, either from hereditary transmission, of mental or physical development aided by early training and surroundings, is from disease. It is a question to which the medical profession is beginning to direct the most earnest attention, both scientifically and from practical observation, if much of the disease, the poverty, the untold suffering and the sacrifices of early life in childhood could not be prevented under a different system of prison life and that of childhood. The physician is no longer looked upon as simply the giver of drugs, administered for the relief of suffering, but, through his knowledge of the laws of nature gained in the study of his profession finds his most important work in the prevention of disease and crime, and in this prevention he should stand foremost in the ranks of statesmen and philanthropists in the regeneration of the world. He should not only make his influence felt in the ordinary duties of his profession among the sick, but on the public at large, and upon legislative bodies in the union of proper hygienic laws in crushing out that terrible childhood slavery which thus far has, to a certain extent, among some of the states, defied public opinion in its crime against the little children doomed to slavery from the dawning hours of childhood which dwarfs and blunts the mind, and sows the dragon's teeth which hereafter bear a harvest of crime and death. The childhood slavery in the factories and mills of some of our states is a crime against helpless childhood, against republican institutions whose success depends so largely upon the intelligence and moral rectitude of the citizens and a crime against sturdy, honest manhood. One of the re-

porters of the *New York Journal*, speaking of the condition of little children employed in the glass works in New Jersey, draws a picture of child slavery as found to-day in free America, infinitely worse than the most abhorrent pictures of the negro slavery which at times has cursed the nation and the world. "I've found," says the reporter, "men, women and children living in absolute slavery. Children, under 12 years of age, many of them looking like mere babies, were toiling under conditions which could not help but warp them physically and mentally, and doubtless soon send them to their graves. Their clothing is rags, their food, crusts, their sleep short, their labor long, until every hour of the twenty-four has its regrets for them. In the finest mill in Columbia, South Carolina, I found a tiny girl of 5 years in a spinning room. Her little sun-bonnet had fallen back on her neck and her hair was covered with the threads which had fallen back on to her head from the frame as she worked. She was helper to her sister. Neither child knew her age, but a girl of eight standing near, told me that they were seven and five, and worked there all day long. Many of these children toil in the noise of machinery, in a fetid atmosphere, for ten cents a day. In one of the largest mills in South Carolina, controlled and owned by northern capital, were children who did not know their own ages, but were working from 6 P.M. to 6 A.M. without a moment for rest or food, without a single cessation of the maddening racket of the machinery, in an unsanitary atmosphere."

A physician who has made a special study of the subject, says that 10 per cent. of the children who go to work before 12 years of age, after five years, contract active consumption. In England, less than half a century ago, a form of child slavery prevailed in the manufacturing districts, no more terrible in its suffering and its propagation of disease and crime than that which is now found in free America, but which was abolished to a certain extent through parliamentary interference brought about by aroused and indignant public sentiment, fed by such men of letters as Charles Kingsley, Frederic Dennison Maurice, Charles Dickens, Elizabeth Barrett Browning, Gerald Massey and Charles Mackay. Foremost among the statesmen, through whose persistent efforts the victory for the white slaves was obtained, stands the name of Lord Ashley, later the Earl of Shaftesbury.

The whole soul dedication of life's best energies which marked the career of Lord Shaftesbury in his splendid services for the enslaved women and children of England and the lives of scores of others of the greatest moral heroes of the ages is what is called for now in inaugurating and carrying forward this great battle of childhood slavery and the civilization of to-morrow against soulless and soul-destroying greed. In pointing out the most fruitful cause in this slavery of childhood, of disease passing in the form of heredity from one generation to another and its natural fruits in nine-tenths of the crime from which community suffers and which taints to a greater or less extent the life-blood of a nation, the medical profession must take a leading position, and to a great extent in influencing that legislation now so imperatively required bring about the end desired. However much it may savor of Imperialism, a word so prominent before the public at the present time, action in certain matters should be removed from state sovereignty, and even though it may require a change of constitution, become a part of the statute laws of the United States. Foremost of these is to regulate child labor in factories and mills. If left to the public opinion of individual states, years may pass before the work so much desired and which affects the welfare of the entire nation, can be accomplished. There is no power which can be so potent in this great work as that of the medical profession. It knows better than any other the intimate relation of body and mind, acting and reacting upon each other, producing disease, crime and untold suffering, and all its influence should be brought to bear upon Congress to produce a concentration and unification of the law enforced by the general government. Another reform which should be included in this change of constitution is a general law applicable to the entire nation regulating the cause of divorce. In the formation of both these laws, which should be considered from the highest standpoint of utility and justice, the medical profession should occupy a prominent place, as none better than they are more intimately acquainted with the evils produced by the present system in which the laws which should affect the whole nation as a unit instead of conflicting as they now do, state with state, to the confusion and disgrace of all.

LET THE DOCTOR BE THE JUDGE.

"A LITTLE knowledge is a dangerous thing" is never more correctly applied, says the *Medical Critic*, than in the case of the laity considering and debating upon strictly medical problems, especially as to symptoms relating to disease. To the unprofessional public, fever is a disease and is treated as such. It is thought to be a danger indication and a condition whose removal brings about a cure. Nothing could be more fallacious. Fever is a symptom-complex which only the well-trained physician can appreciate. It is no longer estimated by the rate of the pulse or the feeling of the skin, but by accurate clinical thermometry. The question of the number of degrees above or below the normal point is of value only when taken in connection with the other symptoms and signs present in a given case. There are many conditions in which a high temperature may occur, such as 104° or 105°, which would be decidedly alarming to a layman, but to the physician it is a correct indication that all is going well. The physician knows that infants and young children may, upon the slightest pretext, such as excitement, teething or a mild attack of indigestion, have what would seem to the uneducated a dangerous and perhaps deadly mal-

ady. Many affections, such as internal cancer, forms of renal disease, are characterized by normal or subnormal temperature. On the other hand, a high temperature in croupous pneumonia is an indication that the malady is progressing favorably. Occasionally, a physician will give an intelligent mother a thermometer in a special case and instruct her how to take temperature, but the indiscriminate use of the thermometer by the public is dangerous, and in the end will do vastly more harm than good. We therefore deprecate the advertising of clinical thermometers in lay journals to the public, as is done by the Taylor Brothers Company in popular magazines, as a dangerous practice, pure and simple. "Render unto Cæsar," etc., and let the doctor be the judge who is and who is not to have a clinical thermometer.

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PRACTICAL DIAGNOSIS. The Use of Symptoms and Physical Signs in the Diagnosis of Disease. Fifth edition revised and enlarged. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc., etc. Illustrated with 236 engravings and 25 plates. Lea Brothers & Co., Philadelphia and New York, 1902. 698 pp.

A new edition of any medical book each year, shows how the profession regard the work, and Prof. Hare's authority stands at the head. In the present edition the author has practically rewritten the text, and added new material which brings the subject to date. As stated in our previous reviews, the object of this work is to present the symptoms of a disease as they appear, and from this group of symptoms to arrive at a diagnosis and a prescription, a most laudable undertaking.

The present edition differs materially from the others in the fact that its scope has been broadened to include not only the symptoms, but also the physicial signs and clinical tests, which experience has proved to be reliable, thus making the book as complete as possible. Illustrations are used when practicable. No clinician can afford to be without this book and its companion, the Text-book of Practical Therapeutics, by the same author.

DISEASES OF THE STOMACH. Their Special Pathology, Diagnosis and Treatment, with sections on Anatomy, Physiology, Chemical and Microscopical Examinations of Stomach Contents, Dietetics, Surgery of the Stomach, etc. By John C. Hemmeter, M.D., Ph. D., Professor in the Medical Department of the University of Maryland, Baltimore; Consultant to the University Hospital and Director of the Clinical Laboratory; author of "A Treatise on Diseases of the Intestines," etc. With many original illustrations, a number of which are in colors, and a lithograph frontispiece. Third enlarged and revised edition. Philadelphia: P. Blakiston's Sons & Co., 1902. 894 pp. Price, $6.

This most valuable and eminently practical work has rapidly reached a third edition and the author has taken the occasion to further sift the wheat from the chaff in order to increase its usefulness. Differential diagnosis has been emphasized and some new material added. The author is to be congratulated upon the manner in which his labors have been appreciated. This book will enable the general practitioner to keep abreast the progress in this important line.

A TEXT-BOOK OF HISTOLOGY AND MICROSCOPIC ANATOMY OF THE HUMAN BODY, INCLUDING MICROSCOPIC TECHNIQUE. By Dr. Ladislaus Szymmowicz, A.O., Professor of Histology and Embryology in the University of Lemberg. Translated and edited by John Bruce McCallum, M.D., Johns Hopkins University, Baltimore. Illustrated with 277 engravings, including 57 plates in colors and monochrome. Lea Brothers & Co., Philadelphia and New York, 1902. 435 pp.

In the production of this work an effort has been made to place at the command of English-speaking readers a text-book which includes the best recent investigations in the department of which it treats. The translator has magnified the original text and the illustrations to match the requirements of his aim, and histology is traced through the development of the organs and the histogenesis of the tissues. The book is eminently worthy a place in our literature in every respect.

GENERAL PARESIS. Practical and Clinical. By Robert Howland Chase, A.M., M.D., Physician-in-Chief, Friends' Asylum for the Incane, Philadelphia; Late Resident Physician, State Hospital, Norristown, Pennsylvania. 12mo. 290 pages. Illustrated. Cloth, net, $1.75. P. Blakiston's Son & Co., Philadelphia.

Since the publication of Mickle's book, a work of very different character from the present, there has been no work issued upon the subject of General Paresis. Dr. Chase's purpose has been to present for the use of general practitioners a brief, thorough guide to Symptomatology and Different Diagnosis, with such instructions for treatment as have been found of value in his large experience. Paresis is considered in its origin and in each of its successive stages, each symptom being carefully described and the experience of alienists and writers of authority consulted to illustrate, especially from typical cases, the emphatic symptoms useful in diagnosis. While written from the author's own work, his book is of broader significance from this inclusion of many illustrated references from the similar work of others.

The illustrations form a new and more complete series than any heretofore presented. They are reproductions of photographs from the records of the Pennsylvania State Hospital for the Insane at Norristown; and in each stage of paresis are given four or more likenesses most typical of the exact conditions described. While there have been represented portraits of confirmed paretics, there has been no series hitherto published showing the earlier and more or less indistinct and vague symptoms of the disease. The illustrations in this respect reflect a most commendable feature in the character of the text, namely, the effort to give the greatest aid in differential diagnosis and in the recognition of incipient disease.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvement in Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. 3. Sept., 1902.

In this volume diseases of the thorax and its viscera, including the heart, lungs and blood-vessels are

treated by Wm. Ewart, M.D., F.R.C.S.; dermatology and syphilis by Wm. S. Gottheil, M.D.; diseases of the nervous system by Wm. G. Spiller, M.D.; obstetrics by Richard C. Norris, M.D. All the articles show great research and are treated with marked ability. Illustrations accompany the text when necessary.

TEXT-BOOK OF ANATOMY. Edited by T. G. Cunningham, F.R.S.

The several contributors to this volume were pupils and for a longer or shorter time assistants of Sir William Turner, one of the greatest anatomists of the age. The arrangement of the matter treated is very much the same as that adopted in the various courses of lectures delivered in the schools from which the different sections of the work have emanated. The first chapter is devoted to the general principles and elementary facts of embryology, then follow in an order best suited to the student the chapters dealing with the various systems of organs; while the last 75 pages are used for the purpose of applying the information in the preceding part of the book to the practice of medicine and surgery. Each chapter is more or less complete in itself, although an effort has been made to weld them all into one consistent whole. In typography and illustrations, and in the correctness and fulness of the subject-matter the work is unsurpassed by any scientific text-book now before the public.

THE INTERNATIONAL TEXT-BOOK OF SURGERY. In two volumes. By American and British Authors. Edited by J. Collins Warren, M.D., LL.D., F.R.C.S. (Hon.), Professor of Surgery, Harvard Medical School; and A. Pearce Gould, M.S., F.R.C.S., of London, England. Second edition, thoroughly revised and enlarged. Vol. I. General and Operative Surgery. Royal octavo of 965 pages, with 461 illustrations, and 9 full-paged colored lithographic plates. Vol. II. Special or Regional Surgery. Royal octavo of 1122 pages, with 499 illustrations, and 8 full-paged colored lithographic plates. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $5.00 net; sheep or half morocco, $6.00 net.

In planning this work the editors and co-workers have kept constantly in mind the needs of both student and practitioner. The result—a masterly exposition of the art and science of surgery, untrammeled by antiquated traditions. In its realization they have given to medical literature an invaluable text-book, embodying a clear but succinct statement of our present knowledge of surgical pathology, symptomatology, and diagnosis, and such a detailed account of treatment as to form a reliable guide to modern practice. In this new edition the entire book has been carefully revised, and special effort has been made to bring the work down to the present day. The chapters on military and naval surgery have been very scrupulously revised and extensively re-written in the light of the knowledge gained during the recent wars. The articles on the effect upon the human body of the various kinds of bullets, and the results of surgery in the field are based on the latest reports of the surgeons in the field.

SAUNDERS' QUESTION COMPENDS, II. Essentials of Diseases of the Ear. By S. B. Gleason, S.B., M.D. Third edition. Thoroughly revised.

In this little compend the diagnosis and treatment of diseases of the ear have been brought absolutely down to date by a thoroughly scrupulous revision. In their present form, Saunders' Question Compends stand as a model of what a student's aid should be. The profession owe a debt of gratitude to the publishers for their unequaled Question Compend Series, in which so much information is contained in so small a space.

SAUNDERS' QUESTION COMPENDS. Essentials of Histology. By Lewis Leroy, B.S., M.D. Second edition. Thoroughly revised and greatly enlarged. 16mo. Vol. of 263 pages, with 92 beautiful illustrations. W. B. Saunders & Co., Philadelphia, 1902. $1.00 net.

In this edition a number of new original illustrations, mostly photomicrographs, have been inserted. The chapter on technique has been enlarged and a description of the appendix and rectal valves added.

A TEXT-BOOK OF MATERA MEDICA, THERAPEUTICS, AND PHARMACOLOGY. By George F. Butler, Ph.G., M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Chicago, Medical Department of the University of Illinois, etc. Fourth edition, thoroughly revised. Handsome octavo volume of 896 pages, illustrated. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $4.00 net; sheep or half morocco, $5.00 net.

The new edition of this commendable work is offered to the profession after a careful and complete revision. The pharmacology and therapeutics of each drug have been thoroughly revised, incorporating all the recent advances made in pharmacodynamics.

The chapters on organotherapy, serum-therapy, and cognate subjects have been enlarged and carefully revised.

One of the most important additions is the chapter on the newer theories of electrolytic dissociation and its relation to the topic of pharmacotherapy, and the relevant discussion added of the simpler relations of chemical structure to drug-action. The profession will undoubtedly greet most cordially this new fourth edition of a work supplying the student of medicine with a clear, concise, and practical text-book, adapted for permanent reference no less than for the requirements of the classroom.

THEORY AND PRACTICE OF INFANT FEEDING, WITH NOTES ON DEVELOPMENT. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Women and Children of the New York Post Graduate School and Hospital, with numerous illustrations. New York. William Wood & Co., 1902.

Dr. Chapin occupies a distinguished position as a specialist in diseases of children, and any work from his pen on subjects to which he has devoted his professional life will be received with more than usual interest. The great mass of literature on infant feeding that has appeared within the last few years has been devoted for the most part toward producing a substitute food that should chemically approximate human milk. In this book the special function of milk in developing the digestive tract of the young animal is treated for the first time, and the conclusions drawn seem warranted by the experiments.

Instead of laying down rules and formulas for preparing food supposed to be suitable for infants of different ages, the author has aimed rather to show the fundamental principles of growth, nutrition and digestion during infancy, and then leave it to the physician to apply these principles. The work is full of valuable suggestions and should find a place in every medical library.

PHYSICAL DIAGNOSIS. DISEASES OF THE THORACIC AND ABDOMINAL ORGANS. By Egbert Lefevre, M.D., Professor of Clinical Medicine and Therapeutics in the University, and Bellevue Hospital Medical College. Illustrated with 74 engravings and 12 monochrome plates. Lea Bros. & Co., 1902.

In this little volume especial emphasis has been laid on the altered anatomy of the organs under examination, and its relation to the physical signs. The respiratory and cardiac sounds, their praductions and their modifications, both normal and pathological, have been discussed more fully than in most books of like scope, as experience has shown that unless the student clearly understands how these sounds are produced the tendency is to regard each variation from the normal as pathognomonic of special disease, rather than dependent on changes in structure or function which may be present in conditions not necessarily pathologic. Of course a brief account is given of the morbid changes in different organs and of their secondary effects, both immediate and remote.

DISINFECTION AND DISINFECTANTS. A Practical Guide for Sanitarians, Health and Quarantine Officers. Price, $2,00 net. By M. J. Rosenan, M.D., Director of the Hygienic Laboratory and Past Assistant Surgeon U. S. Public Health and Marine Hospital Service, Washington, D. C. Illustrated. Philadelphia. P. Blakiston's Sons & Co. 1902.

The author has set down the results of a large experience gained in sanitary work of a public health character both in the field and in the laboratory, as to how and when to disinfect, from the standpoint of the disinfectant used, the object to be disinfected and the disease for which the disinfection is done. All necessary information upon these points is given in a concise but clear and practical manner

PRACTICAL OBSTETRICS. By Edward Reynolds, M.D., and Franklin S. Newell, M.D. Illustrated with 252 engravings and 3 colored plates. Lea Bros. & Co. 1902.

This work is founded upon an extended experience in clinical teaching and practice in the leading Boston hospitals and in Harvard University, and expresses the belief of the authors that the general principles of a subject are rendered more intelligible and interesting to the student when presentd in connection with the practical details of bedside work. Written upon these lines, notwithstanding the voluminous text-books upon obstetrics, this volume will be found of special interest and value.

THE DISEASES OF INFANCY AND CHILDHOOD. By Henry Koplik, M.D., Attending Physician to the Mt. Sinai Hospital. Illustrated with 169 engravings and 30 plates in color and monochrome. Lea Bros. & Co. 1902.

This work is based upon the author's individual experience, and shows a familiarity with the best thoughts of American, English, French, German and Italian pediatric science.

With careful judgment regarding the work of other pediatrists, he has endeavored to spare his readers the labor of deciding between divergent views, and has given to the physician and students of his own country a practical guide and text-book of great excellence and completeness.

CORRESPONDENCE.

ALCOHOL AS A MEDICINE.

To the Editors of the MEDICAL TIMES:

May we not look upon the therapeutic employment of alcohol as one of those more or less transient fashions or fads in medical practice which have succeeded each other ever since the healing art emerged from the ages of superstition and savagery? In like manner (as pointed out by Dr. H. D. Didama, in a recent address), from the time of Hippocrates, twenty-three hundred years ago, down to the middle of the last century, the great majority of medical men considered venesection—the abstraction of blood—absolutely necessary in the treatment of almost every disease. Nervous children were bled repeatedly, and the practician who neglected to use the lancet in pneumonia was thought to deserve arrest for manslaughter in the event of his patient's death. Now, this so-called experience of ages has become a discarded tradition, unworthy of respect.

A hundred years ago, the eminent author and practician, William Cullen, prescribed for consumptives a low diet of milk and acid fruits, but no alcohol. Thacher, an American physician, whose book on the Practice of Medicine was published in 1826, advised bleeding, cupping and blistering in pulmonary diseases, but admitted that in the last stage of ulceration bleeding would do no good. He did not recommend alcohol.

In 1828, Gregory, a London physician, whose book on the Practice of Medicine was considered superior to all others, declared that all spirituous and fermented liquors should be avoided in consumption. At this time, when the lancet was still in all its glory, Gregory advised in pneumonia the abstraction of blood from an orifice large enough to ensure the flow of a pound in five or six minutes, but declared with a wisdom in advance of his time, that in all cases of great weakness, wine should be avoided.

The evolution of the alcoholic practice had advanced so far in the next forty years that the great Flint recommended large doses of whiskey in tubular consumption, and he still advocated its use in 1884, ten years later. So did Roberts, physician to the Brompton Hospital for Consumption in England. Even down to the present time some prominent authors and compilers of medical books, and a few aspiring physicians of moderate capacity and acquirements who write for professional journals and popular magazines, after declaring that alcohol acts as a poison on the nerves, blood vessels, stomach and liver, causes tremor of the hands, heavy breath, irritability of temper, forgetfulness, predisposition to tuberculosis of the lungs and delirium tremens—after all this they make the astounding statement that, used in moderation, alcoholic beverages may be taken throughout a long life without impairing the general health. They actually prescribe whiskey in the treatment of diabetes, in advanced tuberculosis, in a majority of cases of pneumonia, in diphtheria, in typhoid fever, in the very attack of delirium tremens caused by drinking whiskey if the pulse should become rapid and flagging.

This administration of whiskey, brandy, etc., is the outcome of their belief that alcohol is a stimulant. Experiments by the most competent and experienced physiologists have shown that it is a narcotic poison, quickening the heart's action, but making it weaker, and that if given to a person collapsing under ether or chloroform it hastens death, if it does not actually cause it. Some physicians still argue that in small doses whiskey

is a stimulant, but admit that in large quantities it is a depressant. Yet in typhoid fever and pneumonia, when the patient is debilitated, with a high temperature, a weak and rapid pulse, the so-called stimulating quantities—a teaspoonful or so every hour—are not given, but the depressing doses, increasing the amount to two tablespoonfuls every ten or fifteen minutes till the fatal termination has taken place. This is a practice founded on experience.

In the olden days, under the Sangrado treatment, seventy-five pneumonia patients out of a hundred survived and only twenty-five died. These, it was claimed, passed away in spite of the bleeding. Is it not high time that alcohol should be eliminated from all prescriptions for diseased conditions?

When we have an abundance of efficient and safe heart stimulants and tonics, why should we neglect them and resort to a drug which may engender diseases and make the last state of the patient worse than the first?

G. L. F.

RUPTURE OF THE FALLOPIAN TUBE AND ARTERY.

While spontaneous rupture of the Fallopian tube and artery is of rare occurrence and medical and surgical works rarely speak of the accident, yet having had two cases of it during the past three years the subject is of sufficient importance to merit a passing notice. The etiology of this condition in the two above-named cases being so widely different that no definite cause can be named unless it be from a relaxed or brittle condition of the artery and tube. One case occurred in a young lady of 23 years and the other in a young woman of not more than thirty years. The former of the phlegmatic temperament and the latter of a nervous, wiry temperament and at full term of pregnancy. The former case, of which I shall speak only, had taken a long walk the day previous and on the day which the accident occurred while standing at the mirror arranging her hair her husband sprang suddenly at her back giving her a severe fright. Finishing her dressing, she and her husband went across the street to a wedding, and after being there but a short time she fell in a faint upon the floor and complained of slight pain in the left ovarian region. Being taken to her home she went immediately into a state of collapse. Reaching her bedside soon after, she was found in the following condition: Temperature 2° below normal. Pulse not perceptible at the wrist. Whole body covered with a cold clammy perspiration. Face pallid and anemic, or in other words, all the symptoms of a profound collapse or shock. In spite of large and oft-repeated doses of camphor, verat., atropin, strych-nitrogly., and brandy by mouth and hypodermically, and also warm salt waters, enemas frequently repeated, there were no signs of reaction until the following morning. The above condition beginning at 5 P. M. on the previous day.

During the forenoon of the following day sufficient reaction having taken place to warrant a chance operation, though the patient was far from revived—the pulse still acting badly and death being highly probable, a surgeon was despatched for and at 3 o'clock the operation was begun.

On the incision being made through the abdominal wall great quantities of thick clotted blood gushed forth from the abdominal cavity. This being cleared away and the tube brought forward, it was found with a rupture over one inch long in the middle portion of it. This was severed near the uterus and the remainder of the tube and ovary taken from the abdomen.

Either on account of the loss of blood or from some unknown reason the wound in abdomen acted badly and the abdominal wound formed many stitch abscesses and refused to heal except by granulation. At the end of first week all the stitches sloughed out above the muscular tissue leaving a wound from umbilicus to pubis wide open with about 2½ inches in depth of fat and of about 2 inches in width. This wound was about three months filling in and at the end of the second month milk leg appeared on the side of the rupture which complicated the case very much.

Recovery was tedious and slow, occupying nearly four months, but the lady is now as well as ever. From the foregoing we can give the symptoms of spontaneous rupture of the Fallopian tube and its artery as all of those of profound shock. Patient covered with a cold, clamp sweat, features pinched and collapsed, pulse at wrists imperceptible and pain in abdomen, with vomiting.

This may assimilate a case of cholera morbus and one could easily make that diagnosis. The purging only would be absent from the symptoms. This, as sometimes with other diseases, an early diagnosis can only be made by instituting some treatment which if failure meets us we begin to question our diagnosis. Supposing we come to such a case and having made the diagnosis as cholera morbus, we give our camphor, verat., arsenicum and other remedies indicated with heart stimulants of nitro-gly-strych-atropin, brandy and salt solutions, etc., with heat applied to body and often but soon after the ether was administered it began to improve, becoming stronger and more regular and when patient was fully under the anesthetic her condition was considered good for the operation. Only once during the operation was anything administered for the patient, and that was one dose of atropin for a profuse perspiration.

The only thing against an early operation is the administering of an anesthetic. This should be attempted at once as soon as a diagnosis is made and should there be any reason in the condition of the patient demanding a cessation of the anesthetic other measure should be substituted to assist in the quieting of the patient and if these all fail then we must wait for a reaction from the shock, taking our chances on the life of the patient.

F. P. WARNER, M.D.

Canandaigua, N. Y., October, 1902.

"WHERE AM I AT?"

From a paper on "Specific Treatments," by Dr. Wm. C. Goodno, read at the meeting of the A. I. H. (*Hahnemannian Monthly*, August, 1902):

Whether it is best to employ such [antibacterial] methods, or to antagonize the results of the influence of the poison upon the blood and tissues of the body by the devious paths of symptomatic prescribing, is one of the most important questions before the Homeopathic profession to-day. The mortality from pneumonia in hospitals varies from 20 to 30 per cent. This probably holds good for the Homeopathic hospitals. The mortality is rarely as low as 15 per cent. in private practice. The mortality [under creosote treatment] has been reduced to less than 2 per cent. My personal experience, thus far, fully confirms the published statements. The treatment of diphtheria by its antitoxin is so certain in its results, and now so generally practised by all well-informed physicians, that its neglect is horrifying. I consider the treatment perfectly specific, *i. e.*, it practically never fails unless its application is too late. Highly

satisfactory as is the Homeopathic treatment of scarlatina, my experience leads me to believe that the carbolic acid method is much superior. Viewed from the clinical standpoint, homeopathy is not a perfect system of therapeutics. But I insist upon our full right to all of therapeutics. Let us not claim too much, but remember that homeopathy developed in the beginning of the scientific era in medicine as a reaction against the excessive and unwise medication of the time, and that the great results immediately attained were in a measure apparent only, and that they have been employed too much for their face value ever since. To deny the possibility of some recent methods being more successful than Homeopathic medication is to relegate therapeutics to the position of being the only branch of medicine in which advance is impossible. Had Hahnemann lived until our day, I doubt not that with his progressive and scientific mind he would look with contempt upon some of us little fellows, who have spent most of our time worshipping at his shrine. As to the future of Homeopathy, I feel that the time has arrived when we must demonstrate its positive and relative value, if we hope for it to retain even its present position. Strange to say, there are few reports to be found in our literature embracing any considerable number of cases of a single disease. Had we not better be up and doing in the matter of developing satisfactory evidence?

From an article on "Do Homeopaths Need Antitoxin?" by Dr. C. E. Fisher, ex-President A. I. H. (*Medical Visitor*, August, 1902).

It is safe to assert that the homeopath who relies upon antitoxin deliberately sacrifices from eight to ten lives out of every hundred he is called upon to treat, with diphtheria. The best the most ardent antitoxinationists have been able to do with this much-vaunted product has been to reduce the mortality from thirty-six per cent. under old methods to about sixteen and one-half per cent. under the new, while, on the other hand, it has been demonstrated with equal reliability that under even the most ordinary homeopathic treatment, that of alternation, etc., a trifle less than seven per cent. are lost. Just why, then, homeopathic physicians and journalists should use and advance antitoxin is unexplainable. Antitoxin is polluted horse-serum. The chief preservative used to keep it from spoiling is carbolic acid. Carbolic acid is homeopathic to many a case of diphtheria. Homeopathy has infinitely better measures for combating diphtheria than are offered by the antipathetic profession, and of these we should consistently avail ourselves to the limit before flying to nostrums of doubtful scope and value. Our armamentarium is replete with splendid curatives, whose pathogeneses make prescribing a science and curing almost a never-failing certainty. A correct homeopathy is a scientific procedure, a careful individualization, a rifle-shot directing of medication, a precise, accurate, successful adaptation of the right remedy in each individual instance, and not a wholesale adoption of supposed specifics which have no proven value and no pathogenic outline upon which we can work unerringly. I look upon it as lamentable and thoroughly inconsistent that we should continue to uphold and justify homeopathy as a separate and deserving system of practice, and yet hold that the best it can do is to cure everything pretty well but diphtheria, everything pretty well but pneumonia, everything pretty well but typhoid fever, everything pretty well but epilepsy, everything pretty well but syphilis, everything pretty well but pain, and so on down the list, according to the individual notions, weaknesses and unbeliefs of individual practitioners. What moral and logical right have we to separate existence as an honorable profession if this be our portion and limit? With me as time rolls on and my experience and observation broaden and deepen I become more and more convinced that my preceptors of thirty years ago knew what they were talking about when they advised me to let allopathic measures alone and adhere to straight homeopathic doctrine and practice. To them homeopathy was all-sufficient. It ought to be all-sufficient to us. *

RETROSPECTIVE THERAPEUTICS.

A Phenomenon Observed on the Tongue in Acute Malarial Infection.—L. Lofton (*N. Y. Med. Journal*, April 12, 1902), who has had a very extended experience with malaria in the South, describes a condition of the tongue which he states always exists in connection with acute malarial poisoning, and which he claims to be pathognomonic of the disease. This condition presents, according to Lofton, upon exhibition of the tongue, one or more (generally two) dark lines running from the base of the organ to the apex, and usually separated by a clearly defined tract of clean mucous membrane about one-sixteenth to one-eighth of an inch wide. These lines are pyramidal in appearance, and begin among the large papillæ at the base of the tongue. They vary in width, and may be from one-eighth to one-quarter of an inch wide, gradually coming to a point in the middle of the tongue. In color they resemble the stain of a ten-per-cent. solution of potassium permanganate that has been exposed to air for some time. They are quite different from the discoloration seen in users of tobacco and snuff, and when once carefully noted are easily recognized in future. This condition will most likely be found from one day to two weeks after exposure or inoculation. It remains in some individuals longer than in others, notably in a negro. It is more beautifully defined from six to twelve hours after the initial sporulation, and remains until the system is thoroughly cinchonized. Purgation alone, so far, has failed to relieve the condition, for the gamut of drugs has been run in this connection time and again. Only one line will be found more often in the colored man than in the white.

Lofton adds that where this peculiar condition of the tongue exists, we may rely upon eliminating the malarial poison in short order if the case is taken in hand within forty-eight hours. If procrastination is practised, as a rule a protracted illness results.

In conclusion the author states that out of several hundred of these cases as primarily seen, but few have had any rise of temperature until from twenty-four to thirty-six hours have elapsed.

Treatment of Locomotor Ataxia.—The most important consideration (*Indian Medical Journal*) is, as a rule, rest in bed, which, if prolonged, often hinders the progress of the disease. In any case, undue fatigue or over-exertion should be avoided. The rest cure is eminently suited to this condition. The second great indication is good nursing and plenty of good rich food containing very little fat. The third indication is frequent warm baths. The greatest benefit results from saline baths at a temperature of from 30° to 32° C. The bath should not, as a rule, last longer than fifteen minutes. Chills and sweating should be avoided and warm clothing should be worn. For individual symptoms, electricity, massage, narcotics, and analgesics are indicated.

What Constitutes "Successful Vaccination."—The Supreme Court of Mississippi does not think the

contention sound, advanced in Sovereign Camp Woodmen of the World vs. Woodruff, that "successful vaccination" means entire immunity from smallpox. It says that it is well known that many learned men of the medical profession believe that inoculation with vaccine matter will prevent smallpox, or greatly mitigate its virulence, but the court is not aware that there is a concurrence of medical opinion that vaccination is an absolute preventive of smallpox. Here a contract of life insurance was qualified by a provision that, until the insured had been successfully vaccinated, death from smallpox should forfeit the insurance, and the court holds that though he died of smallpox that was no bar to a recovery of the insurance, if he had been successfully vaccinated, as a physician testified that he had been. "Successful vaccination," it says, carries the idea merely of the production upon the person vaccinated of such symptoms or manifestations as are usually produced by such operation when considered effective. The eruption produced by the inoculation, with its accompanying characteristics, is the only certain evidence that vaccination has taken, or is successful. That "successful vaccination" only means that the virus has taken upon the person inoculated, it adds, is supported by the Century Dictionary, word "Vaccination."

A Notable Success in Intercranial Surgery.—The prompt success following the recent removal of a large intercranial tumor by Poirier (*Mémoires de la Sosiété de Chirurgie de Paris,* XXVIII., 2, 3; *Berl. klin. Woch.,* June 2) seems noteworthy. The tumor, the nature of which is not stated in the abstract, was larger than one's fist, weighing nearly ten ounces. It appears to have sprung from without the dura mater, which it penetrated, growing deep into the brain. The large cavity left by its removal was situated in the temporal lobe of the brain. In twenty-four hours the vomiting ceased and the patient regained consciousness. At the end of thirty-six hours the faculty of speech began to return, and gradually the paralytic phenomena disappeared.

Dry Hot Air in the Treatment of Sprains.—C. E. Skinner (*Journal of Advanced Therapeutics,* May, 1902) advocates the use of dry hot air in the treatment of sprains, claiming the following advantages as exclusively dependent thereon:

First, the rapidity of repair, which exceeds that produced by any other agent known, and by reason of which general systemic impairment due to lack of exercise from confinement to the bed, chair, or house, is never induced.

Secondly, immediate relief of pain, which can be rendered practically permanent by repeating the treatments as often as the pain becomes troublesome.

Thirdly, entire absence of any but beneficial after-effects upon the organism at large, no matter how frequently it is applied.

Magnesium Dioxide. —A discovery has been made recently (*Med. Rec.*) which is claimed to be remarkable discovery in chemistry and of considerable therapeutic value. Dr. Friedrich Elias, a Berlin scientist, has succeeded in evolving by a chemical process of his own devising, a magnesium dioxide (MGO_2) which he asserts is capable of emitting a large amount of diffusible oxygen throughout the system. This preparation, which is not a synthetic product, occurs as an impalpable white powder, tasteless, colorless, odorless, non-astringent, non-irritant, non-toxic,and insoluble in water. Dr. Henry Leffman, Professor of Chemistry in the Woman's Medical College, Philadelphia, and Vice-President of the British Society of Public Analysis, has analyzed magnesium dioxide and makes the statement with regard to its composition that it contains no barium, strontium, or calcium compounds. It is free from sodium dioxide and caustic potash—therefore possesses no caustic properties. It is also declared to be capable of exuding large quantities of diffusible assimilable oxygen. It is claimed that this preparation exerts beneficial effects in the treatment of diseases arising from deficient oxidation. If magnesium dioxide be as easily absorbed by the capillaries as is stated to be the case by those who have tested it chemically, it should prove a therapeutic agent of much value.

Therapeutic Value of Work in Hysteria and Neurasthenia.—Sidney I. Schwab (*Interstate Medical Journal*) says that the work cure can be tried with hope of success in that class of neurasthenic and hysterical subjects where there exists an average amount of potential physical vigor, where there is no organic nervous or other disease, and where, above all, there is found the requisite amount of intelligence and mental training to enable them to appreciate and understand the purpose and the meaning of the efforts made to hold them. In the author's experience he has found very few who might not have been treated in the manner indicated if the patient's circumstances and the patience of the physician had been used to their utmost. Monnier, from an experience of thirty-four cases, concludes that by means of useful manual work, hysteria and neurasthenia, in the narrowest sense of the term, can often be made to completely disappear. In cases of mental enfeeblement, psychopaths, alcoholics, according to the time of their existence, the influence of work is often very remarkable. Hypochondriacs and paranoiacs are not especially benefited. Schwab reports the case of a woman of intelligence, but suffering from aggravated hysteria, which it seemed impossible to overcome. Bookbinding, which requires the closest attention and the greatest care in matters of detail, and which is distinctly a fine art, was tried, and has proved to be the needed remedy. There is little doubt that in less than a year the previously hysterical invalid will be able to set up her own shop and lead a useful and active life.

Treatment of Acute Nephritis.—Renvers (*Therap der Gegenw.; Med. Standard*) calls attention to the fact that sore throat, catarrhal gastro-enteritis or an infectious disease may be the cause of an apparently spontaneous nephritis. Treatment must then be directed to the primary disease and not to the nephritis. In diphtheria the early use of antitoxin will have a very favorable effect on the kidney disease, curing it if present and preventing it if not already present. For the purpose of promoting the elimination of toxic substances from the bowels the salines are the only purgatives which do not exert an irritating effect on the kidneys. Rectal enemata of warm saline solutions are also beneficial. The diet should be restricted in albumins, not more than 50 to 60 gm. daily, but should contain sufficient carbohydrates and fats. An exclusive milk diet is to be shunned, as it contains too much albumin. Gruels, etc., should be given instead. With the subsidence of the nephritis milk can again be given in abundance. Meat should be added to the diet very cautiously and slowly, even after the urine is entirely free from even a trace of albumin. Fresh vegetables and fruits are to be strictly interdicted unless diuresis is abundant. If the blood pressure is low, hot drinks, such as milk and lemonade are indicated. Hot drinks containing meat juices or extracts or alcohol are to be abstained from. Hot drinks of

sweetened diluted milk or malt extract with cream, and hot foot baths are useful. Digitalis and strophanthus should not be given if the blood pressure is normal. The best diuretic in his opinion is plenty of fresh water.

A Vegetarian Prize-Fighter.—A recent article in the *New York American and Journal*, by Ella Wheeler Wilcox, presents the following interesting case:

I am in receipt of a most interesting letter from a professional pugilist, known in the sporting world as "Kid" Parker, champion lightweight of the West. Mr. Parker was born in Boston, Mass., January, 1887 [sic]. His height is 5½ feet, weight 133. He is living in San Francisco, and is planning two or three more contests with the best men of his class, and fully expects to defeat them, and then retire. . . .

Mr. Parker is a vegetarian. He is enthusiastic and deeply in earnest in his belief that the vegetarian diet means strength, health, morality and power for humanity. . . .

For many years it has been a notable fact that the most practical of all athletes have been the pugilists. The methods of training adopted by pugilists have nearly always been thoroughly sensible and practical, based upon a hard experience. There is probably no achievement in the whole range of human effort which calls for such concentration of physical and mental energy as a ring fight. If a vegetarian diet will support a pugilist it will support anybody doing any kind of work, physical or mental.

The Administration of Water in Disease.—Lydston (Chicago) sounds a warning note against the too indiscriminate use of water in large quantities. His conclusions, briefly stated, are as follows:

1. While the ingestion of large quantities of water in various affections is often of great value, the treatment is sometimes extremely detrimental.

2. The nutritive value of the blood is often impaired by the relative hydremia produced by the ingestion of large quantities of water.

3. Disturbances of the circulatory and nervous system are frequently produced by it. So-called weak heart, palpitation, nervous irritability, lassitude and exhaustion on slight exertion, are among the phenomena that may result.

4. Serious digestive disturbance, involving impairment of the secretion and composition of the gastro-intestinal juices, and gastro-motor insufficiency, may be produced by the ingestion of water in large quantities.

5. Edema and anasarca, while often relieved by the free ingestion of water under favorable circumstances, are not infrequently enhanced by it.

6. Renal water habit may develop, by virtue of which the kidney becomes permanently sluggish, unless it receives its wonted stimulus of large quantities of water.

7. Acute and chronic inflammatory affections of the kidney are sometimes aggravated by giving water in excess, simply by overworking the renal organs.

8. Inflammatory affections of the lower portion of the genito-urinary tract are often deleteriously influenced by excessive water-drinking, through the mechanical disturbances necessitated by the resultant frequent and copious micturition.

A Contribution to the Subject of Infant-Feeding.—Dr. S. Henry Dessau (*Med. News*) has found that, when all efforts to secure human milk for the infant fail, the simplest, cheapest, and best food for daily use is a fair average quality of cow's milk, diluted with water according to the age and digestive capacity of the child. The "top milk" is preferable. A pinch of table-salt and a heaping teaspoonful of raw cane-sugar should be added to the quart. Placed in a double cooker with cold water in the outer compartment, the mixture should be allowed to remain for ten minutes after the water has begun to boil. In this way the case is acted upon in such a manner that the character of the curd is modified by the milk-curdling ferment in the child's stomach.

Forced Feeding in Consumptives and in Normal Individuals.—Bardswell, Goodbody and Chapman deal with this subject in one of the reports of the Scientific Grants Committee of the British Medical Association (*Brit. Med. Journal*, February 22, 1902). The researches were made in part in the Brompton Hospital.

The general conclusion drawn from all the experiments is that indiscriminate stuffing of the tuberculous must give way to systematic diet based upon activity and extent of disease, amount below normal weight, digestive capacity and preference of patient.

The onset of dyspepsia nearly always coincides with commencing derangement of metabolism. Despite the unfavorable symptoms produced, forced feeding certainly continues to augment the weight; there is no doubt that a certain amount of increase in the ordinary ration is well tolerated.

The effects of forced feeding upon the normal individual comprise increase in the amount of nitrogen excreted, no reduction in nitrogen absorption, diminished absorption of fat, and a rapid and large gain in weight, associated, however, with impairment of the general health, the symptoms including anorexia, nausea, dyspepsia, drowsiness, abdominal discomfort and diarrhea. These results differ from those obtained in the earlier weeks of forced feeding in consumptives, but agree closely with the conditions observed when the latter have regained their lost weight.

THE CLINIQUE.

TREMOR IN NERVOUS DISEASES.

THE first case shows the existence of tremor in general paresis. This is a middle-aged man, whose family history is negative. There is no history of insanity or other nervous disease in either his family or personal history. The patient was a twin, born at full term, and without the use of instruments. He never had convulsions and was always healthy until the winter of 1899, when he had typhoid fever. He denies any specific trouble. Following the attack of typhoid fever he began to suffer from hallucinations and had frequent outbursts of violent temper. He lost interest in his family and conceived the impression that his friends and relatives were working against him. Since the fever there is a history of frequent attacks of unconsciousness, accompanied by twitchings on right side, which lasted for an hour once, but more frequently about ten minutes. These attacks occur every few days. This condition has persisted to the present time. Has been unable to work for over a year.

As we look at him we see an expressionless face, with very few facial lines remaining; his shoulders stoop, and there is a general appearance of mental inferiority. His physical condition is poor. We can find no change in the sensory or motor systems.

His knee-jerks are increased, as are also the elbow-jerks, but there is no clonus. The tremor about the mouth is marked, and this is increased when an attempt to whistle is made. He protrudes his tongue tremulously; his speech is hesitating and slow, although fairly

distinct. His mental condition perverted. He shows delusions of persecution, as well as hallucinations of sight and hearing. These are principally of people conspiring against him. His memory is bad, and he complains of headache and vertigo. His station is fair, his appetite poor, his bowels constipated, and he sleeps badly.

On examining his eyes, we find the typical Argyl-Robertson pupil. There is no paralysis of the external muscles. There is optic neuritis, beginning on both sides, but more marked on left side.

Again we have another case of general paresis. An Irishman, aged forty-eight, married, a day laborer. His family history is remarkable in that he had twenty brothers, of whom only three are living. The cause of death in the family is unknown, but there is history of insanity or nervous diseases.

The patient was always healthy as a child and man; he denies syphilis and excess in use of stimulants. He has worked out of doors and in places exposed to sudden changes of temperature. When young, it is stated, he often fell, but there is no history of any definite convulsions.

He began to have chilly sensations between shoulders, and in a year's time gave up his occupation because of attacks of vertigo, which were often severe. His sight began to fail in one eye; this progressed in two months to such an extent that with this eye he was only able to distinguish light from darkness. There was at the same time some tinnitis aurium, and general pain. These symptoms have continued, with a gradual failure of intellect, until the present time. He became irritable and disposed to be by himself, often walking out and staying away from home for a long time without any object. The general appearance of the patient is one of inferior mental condition. His face is expressionless, which is made more noticeable by the ptosis which is present. His station is fair, although slight ataxia is observed when the eyes are closed and the feet are kept together.

We notice that his speech is curious, his words being uttered in an explosive fashion, but the articulation itself is unaffected. He can whistle, but with some difficulty. The tongue is protruded without tremor, and his gait is unaltered.

The point to which we wish to draw attention is the fact that there is a general tremor when patient stands. When his arms are extended there is seen a fine regular tremor involving principally the hands; this is not altered by voluntary motion to any appreciable extent.

The next case of tremor occurs in a patient with amyotrophic lateral sclerosis. This man, aged thirty-four, flagman, is single, and was also born in Ireland.

His family history is negative, there being no history of insanity, fits or other nervous disease.

This patient, as a child, was always sickly, but never had any convulsions. After fifteen years of age he was in good health. His personal history is negative.

Some years ago, during unusually severe weather, his hand swelled and became stiff, but he had no pain. He recovered from this without medical attendance in two weeks. There was no loss of power, sensation, nor was there any tenderness along the nerves. There is no history of syphilis or drinking to excess.

His disease began some years ago, and first manifested itself while writing. It was noticed first that his pen continually slipped from his grasp. There was also noticed numbness and stiffness of fingers and swelling of the entire hand. In a few weeks he was compelled to discontinue his work as a clerk, and took a position as flagman. Since then the condition continues to grow worse. Later, a tremor of the hands developed; and some months later, while standing, he felt a tendency to fall forward. His facial expression is rather vacant; his cheeks are flushed, and this condition is much increased when patient is exposed to the sun. His tongue is pale and flabby; station is good; he has no bladder or rectal symptoms, no subjective symptoms, fulgerant pains or parethesia. His right shoulder is two inches lower than the left one, and there is a right lateral curvature of the spine.

Atrophy is beginning in the supra- and infraspinatio muscles on the left side, but has progressed to a considerable degree on the right side, here involving also the deltoid, biceps and, to a less extent, the muscles of the forearm. The hands, instead of exhibiting the usual signs of wasting, are very edematous and red. The muscles of the legs do not seem to be affected. There are no electrical changes in the muscles.

There is clonus of the right wrist, made evident by extending the hand. The tendon taps on this side are all excited. The tendon taps on the left side are diminished and no clonus can be elicited. The knee-jerk is very active on both sides. Sensation in the right hand is poor for localization, but sense of touch is well preserved. In the left hand the compass points are distinguished at normal distances, and sensation otherwise is normal.

By the use of the dynamometer it shows R. 65, L. 80. The left arm can be extended to an angle of 90 degrees, but not without aid of pectoral muscles. He can put his hands to his mouth, flexes and extends forearm and fingers, but the movements are feeble. The movement of the extensors are stronger. There is some contraction of flexors of the fingers of both sides.

We notice that a tremor of the entire right arm is developed by a sudden voluntary effort. An object can be held, however, fairly well. In the muscles of the right arm a fine fibrillary tremor is observed. Vasomotor changes are seen in the edema of hands, and the flushed face and hands. The patient was given bichloride of mercury in small doses; and after taking the drug continuously for several weeks declared that he was much better, that the tremor was less and that his legs were stronger.

The next case of tremor occurs in a patient with tic convulsive. A woman, fifty years old, married, born in Germany, and at present a housekeeper.

Her present trouble began some years ago for no apparent reason, with a twitching of the muscles surrounding the eye, which in one year extended to the muscles of the side of the face. Since this she has had attacks of vertigo, during which she has fallen. There are spasmodic twitchings of the orbicularis palpebrarum, and the muscle of the left side of the face, involving the risorius and zygomatic muscles mainly. The angle of the mouth is drawn outward and a little upward. The eyeball is retracted at the time of severest spasms. There is an absence of any pains. The spasm is increased by emotion, and may be stopped by closure of the eyelids. Patient's general appearance is one of good health. Sensation is unchanged; pupils react normally and are equal. She was given tincture of hyoscyamus in increasing doses with distinct relief to the twitching of the facial muscles.

—The most sensitive part of the human body is the tip of the tongue. Next come the lips and then the tips of the fingers.

NEW DEVELOPMENTS IN THE PRODUCTION AND EMPLOYMENT OF THE X-RAYS.

At a meeting of the Augsburg Technical Society (the Medical Society of the same place, and the Society of German Engineers, being present by invitation), Engineer Dr. J. Rosenthal, of Munich, reported on the above subject as follows:

The principle underlying the production of the X-rays remains the same as at the time of their discovery; the details, however, of Roentgen's original process have been greatly improved. The reason that process has not come into more general use is, chiefly, that good Roentgen apparatus, until recently, have been quite expensive, and their successful manipulation has demanded a certain degree of acquired skill. These drawbacks are now obviated by the introduction of a new, simple and very effective apparatus, devised by the author and manufactured by the Voltohm Electric Society of Frankfort-on-the-Main. The whole affair is contained in a small portable case, and is actuated either by an electric light, or, when this is not at hand, by a small storage-battery. Its effectiveness is shown by its bringing into view not only the bones, but also the heart, the lungs and the diaphragm in the living subject, with their movements. Other improvements were mentioned, such as the so-called electrolytic interrupter, and the Roentgen tubes (including the self-regulating Voltohm tubes for very powerful work).

The X-rays are used for both diagnostic and therapeutic purposes, the former being at present by far the most important application. In this, the examiner either employs the photographic process, producing the familiar X-ray pictures, or else the shadow of the object—an internal organ of the body, for instance—is thrown directly on the screen of the apparatus—evidently a great advantage in examinations of the heart or lungs.

In X-ray photography a substantial advance has been effected through a joint invention by the author and Dr. Rieder, of Munich, for producing instantaneous pictures of the thoracic viscera. Whereas, previously an exposure of about 20 minutes was necessary for this purpose, during which time the patient had to keep perfectly still, less than one second is now required. By this method, of course, the internal parts are much more clearly displayed than before was possible. A series of such instantaneous photographs, showing, especially, various diseases of the heart and lungs, nephritic calculi, etc., was projected on a screen, and several original likenesses were also exhibited.

Mention was next made of the punctograph, a small apparatus contrived by the author with the aid of general Practitioner Professor Dr. Angerer, by which the exact location of foreign bodies in the human system can be readily ascertained; also of the orthodiagraph—proposed by Professor Dr. Moritz, and brought out by the Voltohm Society—which is chiefly adapted to indicating the precise form and situation of the heart in the living subject.

In conclusion, Dr. Rosenthal remarked that besides their uses in medicine the X-rays were also of service in chemistry and the arts—*e.g.*, for the testing of precious stones and pearls, detecting adulterations of foods and trade-products, defects in materials, etc. This field of application, as yet a limited one, might yield surprising results in the near future.

—At the present time there are only four women doctors of Berlin University, and three of these are Americans.

TYPHOID INOCULATION

Prof. E. A. Wright's investigation of typhoid inoculation, covering five years in South Africa, India, Egypt and Great Britain has resulted in the publication of voluminous statistics demonstrating both the preventive and curative results, which has reduced the mortality fourfold. Prof. Wright believes better results will be obtained in the near future, owing to the experience in the dosage and standardization of vaccine.

A NEW USE FOR THE ACETYLENE LAMP.

An insect pest, known in France as the pyrale, has for the last two or three years been working havoc among the vineyards of the region of Beaujolais. Against this pest the vine-growers have adopted a curious and apparently effective remedy. Like most other insects, the moth or butterfly of the pyrale is attracted by a bright light, and, taking advantage of this weakness, the owners of the vineyards have fixed acetylene lamps around their areas, the flames being exposed, and the lamps placed over a bowl containing petroleum. At dusk the lamps are lit, and, as the night darkens, thousands of the insects rush to the light, and perish either in the flames or in the petroleum. In the course of eighteen nights, and employing experimentally two lamps fifty yards apart, 170,000 of these winged destroyers were killed. As mosquitoes are similarly attracted by light, the question occurs whether in malarial districts this simple and inexpensive process might not be added to the other means now being so successfully employed in Africa for the extirpation of the anopheles.

The recent death of Dr. John Byrne, of Brooklyn, in Montreaux, Switzerland, is one of the saddests on record. It was undoubtedly caused by the loss of his five children from consumption, the last of which died in February. From that time Dr. Byrne was never seen to smile, but became a prey to melancholy. When he left for Europe he said to the friends who were at the pier to bid him good-bye: "I am going, perhaps, never to return. My work is ended. I am waiting for the summons." It was thought that the disease in the Doctor's family, which passed from one child to another, was contracted by his eldest son who occupied the same stateroom in crossing the ocean with a friend far advanced in phthisis. Dr. Byrne was a leading authority upon cancer and in gynecology. He was born in Ireland in 1825, and during the great famine there in 1847 was at the head of a fever hospital. He was one of the founders of the Long Island College and St. Mary's Hospitals; was president of the American Gynecological Society and of the New York Obstetrical Society.

—A practical way of tying the umbilical cord (*N. Y. Med. Journal*) is to place an artery forceps on the cord near the umbilicus and allow it to remain a few minutes, tightly clasped. On removing the forceps a deep groove of hard, semi-transparent tissue can be seen. The ligature is placed in this canal and tied with a jerk. It is then impossible for it to slip off.

—The commission sent by the French Government has arrived at the conclusion that it is not the rat itself which is the source of infection of bubonic plague, but it is the fleas that infect the rat. That same thing was discovered by Mr. Plummer, of Hong Kong, during the epidemic of 1894, at which time the idea was scouted. It seems now fairly well established that the vermin on the rodents are responsible for the spread of bubonic plague.

MISCELLANY.

—Australians hold the world's record as tea drinkers, consuming 7½ pounds a head yearly. New Zealanders drink 7¼ pounds.

—The Ninth International Congress against the abuse of alcohol will be held at Brussels, April 14 to 19, 1903. For particulars address Dr. Delbrueck, 127 Humboldtsstrasse, Bremen.

—A woman, sixty-five year old, recently gave birth in a New Jersey town, to a healthy girl. The woman's husband is seventy years old, though both are said to be young for their years, and the couple had passed forty years in childless wedlock.

—There are about 2,500 hospitals and asylums in the United States. These give employment to 65,000 people and pay over $23,000,000 in salaries. They have 300,000 beds, are attended by 37,000 physicians, and treat over 1,000,000 patients during the year.

—A scientist recently converted a certain quantity of liquid air into a small solid mass and on examining it found that it was as transparent as clear ice and as elastic as rubber. To test its elasticity he struck it with a hammer and the latter immediately rebounded.

—Portes and Desmouliéres have succeeded in isolating crystallized salicylic acid from strawberries. The *Gaz. Med. Belge* of March 13, mentions this curious fact, and observes that it is important in the study of adulterating substances in preserves, syrups, etc., containing strawberries.

—It is stated that Dr. Frederick G. Novy of the Medical Department of the University of Michigan, will go to India, at the request of the British Government, where experiments will be made with his new intestinal antiseptic, benzoyl-acetyl-peroxid (acetozone), in the treatment of cholera and plague.

—Sidney Phillips, *Lancet*, February 22, 1902, reports 10 cases of epistaxis occurring in children suffering with rheumatism. Of the cases cited 8 were girls. In the majority of cases relief was sought for the epistaxis, the evidences of rheumatism having been overlooked or ignored. In every case the administration of salicylates effected a cure.

—According to official figures the city has a decided advantage over the rural districts in the matter of human longevity. The average age reached in the city is 38.2 years and in the country 31.1. There the urban has an advantage of 7.1 years over the suburban. The advantage of pure air in the country is apparently more than offset by sanitary and food advantages in the city.

—Wiesbaden, brought into prominence by the German Medical Congress holding its recent annual meeting there, presents conditions worthy of imitation. The streets, which are all asphalted or paved with wood, are well flushed with water and swept after midnight, and by this means dirt and refuse are effectually prevented and in consequence the buildings retain their snow-white appearance, the air its purity, and the foliage of the trees its freshness.

—When a steam bath is indicated in country practice it is easily and satisfactorily given, says the *Medical Summary*, by boiling a dozen or more ears of corn, taking them from the water while boiling, wrapping in cloths moistened in hot water and packing them as close to the patient as possible. Keep him closely covered, and a few moments will bring the most profuse perspiration you ever saw.

—Prof. Von Leyden's commission, which, in October, 1900, began an investigation of the spread of cancer, has just published a report, stating that 4,430 men and 7,714 women were under medical care in Germany afflicted with that disease. This shows that the victims of cancer number 215 in each million of the population. Patients over seventy years of age were most numerous. Seventy per cent. of all cases suffered from cancer of the digestive organs.

—By the new law in Germany, a candidate for permission to practice medicine, besides passing successful examinations, must practice for one year at a university clinic or specially designated hospital in the German Empire, of which time at least a third is to be devoted to internal diseases. The candidate may choose the place, but without permission to change it more than twice. The time of practice may also be passed with a suitable medical man, for which the sanction of the Imperial Chancellor is to be obtained.

—At a recent meeting in the interests of the blind, held in the Church House of London, a blind stenographer, by the aid of a recently invented machine, took a verbatim report of each of the speeches. The system is the outcome of a prize offered two years ago by a Braille magazine and is built upon several systems adapted to the Braille method of dots. These dots are embossed by the machine, which is noiseless, upon paper tape. This flows into a basket, to be read back by the fingers of the stenographer and recorded on a typewriter.

—The latest disease is "ping-pongitis," or the "ping-pong ankle." This is all the go in London and it is therefore to be expected that after the coronation the germ will be imported into this country in large numbers by the returning Anglomaniacs. Besides a painful condition of the joints, "at times," says *American Medicine* in describing the disease, "there is actual swelling due to the fact that the unusual exercise causes irritation and low grade inflammation in the bursas of the tendons around the ankle. . . . Rest is the best form of treatment for the new ping-pong tenosynovitis—a medical term that is sure to be popular because it is so sphinx-like and mouth-filling. For the prophylaxis of the affection it is especially important that the ankle should be supported by reasonably snug, firm-fitting high shoes."

—Scientists of the French Academy have recently established that radium, the newly discovered metallic element, is a connecting link between ponderable matter and the yet strange subtle apparitions of energy that have brought a new light into the world of science called by us Roentgen rays. These X rays with their associate rays have opened up a newly discovered country for the scientists of the 20th century, and now it appears that this radium is to play a most important part in the field of discovery that lies just before us, for it possesses the power of giving forth light waves very similar to those we have become familiar with through the discovery of Prof. Roentgen. What seems more strange is the fact that a glass tube containing chloride of radium if held against the temple will give a senation of light to the optic nerve. Even the eyes of the blind are sensible to this light. It remains to be seen what the practical results may be of these experiments which have opened a new door, and what there is behind it.

ORIGINAL ARTICLES.

THE SEGREGATION OF THE TUBERCULOUS.

BY A. L. BENEDICT, A.M., M.D., BUFFALO.

THE writer's attention has been called to this phase of the warfare against tuberculosis, partly by the recently published U. S. Census, partly by an article by his former classmate, Dr. J. Howe Adams of Philadelphia. This article, entitled "Shall We Make Our Consumptives Social Outcasts?", appears in the September issue of the *Medical Age*. It is temperately written and, on that account, it is a scathing rebuke to those who, like the writer, advocate the treatment of tuberculosis with a route of exit, as a contagious disease. Dr. Adams calls attention to the fact that summer visitors are demanding the exclusion of consumptives from hotels at various resorts and he depicts, admirably, the discomfort and embarrassment to which the unfortunate seekers after health are subjected.

Dr. Adams goes rather farther than most writers in behalf of consumptives, in admitting that the human patient is the principal source of the disease and that it is communicable, although he objects to the word *contagious*. We of the opposite school of phthisiophobes, should be equally frank in acknowledging that our scheme of combatting tuberculosis, is unkind to the afflicted and that, although we should prefer not to use so harsh a word as *outcast* to the patient and his friends, our advocacy of segregation does practically amount to this. What is our justification?

As Dr. Adams and others of his school have deplored, the laity has within the last ten or fifteen years, been educated to regard tuberculosis as an internal leprosy and to shun the source of tubercle bacilli. A generation ago, the consumptive was a welcome guest in most households and the last year or two of his life was very pleasantly spent in visiting his relatives and friends and in "having company" at his own home, to amuse and comfort him. As his disease was regarded about as anemia is at present, he was allowed to pet the children, to share the beds of his friends and the delicacies which he had tasted were often passed over to some one else to finish. No pains were taken to boil his table utensils or clothing and bedding, his cuspidor was merely rinsed out, if, indeed, he did not use the register or, in humbler households, gain skill in expectorating at the stove as a target. Now, all this is changed, among the majority of what we call the intelligent laity. Considerable, often minutely painstaking precautions are observed with all obviously infected articles, the consumptive is accorded a grudging and guarded welcome or is frankly forbidden the house of his friends and relatives. Such treatment is certainly ungenerous and selfish, or at least, whatever altruism is felt is directed at the healthy not at the victim of a fatal disease to whom, ordinarily, our pity should be extended.

But in 1890, 122.3 in every 1,000 deaths occurring in the United States, were due to consumption while, in 1900, the proportion had been reduced to 106.9. 122.3 : 106.9 :: 100 : 80 plus. However, the real prevention of death from tuberculosis is not adequately shown by this proportion for the persons who would have died in 1900 as a result of tuberculosis if that disease had been as prevalent as in 1890, were not doomed to death from some other disease or from accident; on the contrary, most of them lived. Thus, the saving is better shown by comparing the deaths from consumption with the total population. For the "registration area," in which returns of vital statistics are inforced with considerable care, we have the following contrast: in 1890, there were 245.4 deaths from consumption per 100,000 population. In 1900, the number had fallen to 187.3. 245.4 : 187.3 :: 100 : 76 plus.

Even in 1890, or rather, as soon afterward as the census report was available, a decline in the tubercular death rate was claimed by most authors who treated this subject statistically. At any rate, there is no reason to believe that the mortality from *consumption*—these statistics do not attempt to deal with general tuberculosis—was abnormally high in 1900. If anything, it may have been lowered by the carrying off of consumptives by grippe during the winter of 1889-'90. Fortunately, no notable factors were present in 1900 to disturb the proportionate normal mortality from different diseases and our conclusions are corroborated by the annual statistics of state boards of health which have shown some fluctuations but, on the whole, a gradual decline in the mortality of tuberculosis in general or of its principal manifestation, *consumption*.

Thus it seems that we may exclude any considerable source of error in the statistic comparison itself. Possibly the death rate from consumption may rise again but there has been a reduction of deaths from this cause, in the impartially expressed opinion of the investigators of the cause of death—that is to say, the American medical profession as a whole—in the last decade, with the strikingly favorable showing of a diminution of the mortality by almost exactly a quarter.

Such a marked change as this is to be interpreted in one of three ways: 1. A change in the definition of the term *consumption* or in the diagnostic capabilities of the profession; 2. A marked improvement in therapeutics; 3. A relatively efficient prophylaxis. While the terms *diphtheria* and *malaria* are employed in a more exact sense than in 1890 and more accurate means of diagnosis exist to-day than formerly, *consumption*, or *phthisis*, or *pulmonary tuberculosis* means to-day, practically just what it did ten years ago. No important step has been taken in diagnosis although the facilities for bacteriologic examination are more generally available. But, on the whole, consumption, at its termination, is a disease very easily diagnosed, comparatively few mistakes could occur and these would be as apt to occur in one direction as the other, so that, in general, any large mass of statistics, collated with reasonable care, may be considered to be as accurate in regard to consumption, as to any other point investigated by the census.

While we should dislike to admit that no advance has been made in the results of treatment of consumption in the last ten years, it must be admitted that these results, in the aggregate, can not make much impression on the death rate for the country at large. In 1910, we may reasonably hope that the provision of state and municipal sanatoria may be credited with a tangible reduction in the mortality of the tuberculous but, at present, the cure of consumption depends practically very largely on the means of the patient and, for the population at large, clinically demonstrable consumption is an almost inevitably fatal disease.

The prophylaxis of consumption has undoubtedly been favored by general hygienic improvement in the last decade of the last century. While a greater proportion of the population is urban, than in 1890, and while cities continue to show a greater abundance of tuberculosis than the country, there has been a considerable improvement in tenement houses. Otherwise, municipal sanitation has scarcely affected tuberculosis, excepting directly along the lines of the recognition and removal of

an infectious element. It can scarcely be said that the country is any more prosperous or the people better nourished than in 1890. There has been a progressive execution of the ideas of rest, open air exercise and similar matters of personal hygiene of the well and of the climatic and otherwise hygienic treatment of the tuberculous. But the great change has been in the practical adoption of prophylactic details based on the idea of the infectiousness and communicibility of tuberculosis. In 1890, there were a considerable number of physicians who did not accept the bacillary cause of consumption; in 1900, this number had been reduced to very insignificant proportion. In 1888, the writer, then a hospital interne, was allowed to introduce antiseptics in the sputum cups, simply because it gave him pleasure to do so and could do no harm and in 1890, the routine disinfection of excreta and contaminated utensils and clothing was sporadic and imperfect. In 1900, it was in vogue in practically every public and semi-public institution and in the great majority of private homes where a consumptive of the more intelligent class was being cared for. In 1890, an anti-expectoration ordinance could probably not have been legally inforced and the control of tubercular infection from meat and milk was scarcely begun. In 1900, most large cities had anti-expectoration ordinances and were keeping their streets clean while several states and the U. S. Bureau of Animal Industry were actually excluding enormous masses of infectious material from the food supply of the people. In 1890, few physicians and very few laymen put into practice, any special precautions against tubercular infection from a patient. In 1900, most physicians and a very large majority of the intelligent laity were observing such precautions. Even the physicians who do not accept the *contagiousness* of tuberculosis, for the most part, follow the same lines of prophylaxis which we phthisiophobes advocate, provided that the comfort and welfare of the patient is not interfered with. In short, the most frequent form of tuberculosis, consumption, has been diminished a quarter in frequency, in ten years, by treating it as a contagious disease. Or, out of courtesy to those physicians who limit the word *contagion* to red-colored diseases, let us use any roundabout method of expression that may be desired, to indicate the transfer of bacteria from a diseased individual, to one who subsequently and consequently, becomes diseased.

Now, why do we phthisiophobes wish to render the consumptive a "social outcast"? There are two and a half reasons for our policy First, we do not believe that it is possible to control expectoration and disinfect contaminated articles thoroughly, so long as the consumptive is allowed to mingle in society as if he had a mild, non-communicable disease. Secondly, because at least twice as many consumptives can be cured if they are segregated in sanatoria in proper climate and under strict discipline than under present lack of method. The half reason is that, unless all of the present belief as to the essential cause of tuberculosis is wiped out or unless some definite and practically infallible means of conferring immunity is achieved, the consumptive must remain what the discovery of the bacillus has made him—a social outcast in the minds of all who value their health and life and who are disposed to avoid danger. That the consumptive already is a "social outcast" is well shown by the following quotation from Dr. Adams's article:

"This year the feeling has grown tremendously. The dictum was sent forth: no consumptives must be allowed anywhere in this region. Hotel proprietors are announcing triumphantly on hotel stationery and walls that 'no consumptives are taken.' As a result, at my resort the consumptives were forced to retire to a shack in the woods, hidden from sunlight, poorly ventilated and heated, and as the weather was cold and damp, the thermometer running as low as 37° in early morning, they ran down hill perceptibly. One man in two weeks' time became a hopeless, helpless wreck, condemned to live alone as an outcast. It affected the spirits of the patients terribly; they became bitter against the people of the place. In passing groups of guests, the consumptives fell into the habit of saying, half ironically, half pathetically, 'Don't be afraid, we're harmless.' But the sting was there; they felt that they were thought harmful, and it was terribly, doubly depressing."

So is the leper a social outcast, yet, except on superficial esthetic considerations, it is much less urgent to quarantine against the leper, for leprosy is not so immediately fatal nor, even without prophylactic measures, so readily communicable as tuberculosis. The fact remains that every human being who is markedly diseased or disabled is, to a very large degree, a social outcast, even if, as in the case of epilepsy, blindness, deaf-mutism etc., he is absolutely innocuous to society at large. Experience has abundantly demonstrated that practically all defectives are happiest and least afflicted by their condition, when placed in colonies of those similarly afflicted.

The great trouble is that we are dealing, not simply with a popular and professional notion but with a very painful fact. It is said that the profession has so preached the communicability of tuberculosis that the laity regard it in a very exaggerated light. Unquestionably, many of them do but the more intelligent do not. It is impossible to state mathematically the element of danger in any one social encounter with a given consumptive, any more than it is possible to estimate the danger of drowning from a proposed change of seats in a row boat or of traumatism from crossing a single railroad track without looking for an approaching train. As a practical matter, it makes no difference whether such a risk is exaggerated or minimized, so long as it is absolutely avoided. One thing we do know with almost absolute accuracy that the danger of tubercular infection by way of table utensils plus that by way of berths in a sleeping car or boat or a bed in a hotel or a private house, plus that by way of playing cards, books, etc. handled by a consumptive, plus that by stepping in or dragging skirts through sputum, plus that by kissing, plus that by being sneezed on, plus that by disseminated dried sputum, plus that by meat and milk, plus infection by the various other routes that may be enumerated . . . equals about one in five, as compared with all causes of death whatever, after early infancy.

We can get some conception of the risk involved in another way. It has been computed beyond question, that a moderately advanced consumptive throws off some thousands or millions of virulent bacilli daily. What is the mathematic chance of catching and destroying all of these microscopic weeds, even from a conscientious and intelligent patient, who is not quarantined? Even if we could be certain that any particular consumptive can be controlled, we can not give him his freedom without allowing the careless and selfish patient equal freedom.

Let us look at the matter for a moment, from the standpoint of the intelligent and conscientious consumptive. He knows what his trouble is, for it is absurd to suppose that he can be trained to avoid infecting others without a pretty full realization of the nature and

prognosis of his disease. He is assured, by his physician of the anti-phthisiophobe school, that he is not a source of danger, providing he systematically pursues a painstaking discipline based on the theory that he is a source of danger. He may not kiss his friends but he may shake hands with them. He may not offer his cup to an acquaintance but at a hotel he may use a public glass, which will be hastily soused in a pail with a lot of others. He may not share his bed with a friend but he may occupy a public bed in a car, and trust to the antiseptic intelligence of a negro whose principal idea in life seems to be the collection of quarters from the traveling public. However carefully he studies his regulations and immunities he cannot fail to realize that there is not much difference between being a "social outcast" and being tolerated on the ragged edge of healthy human society. It is inevitable that he will encounter otherwise agreeable persons who fail to recognize the fine discriminations of his medical adviser and who will fear that he may have tubercle bacilli on his right hand as well as on his lips, who will complain to the hotel proprietor that they do not wish to trust to the sanitary skill of a dish washer, who will importune the Pullman Co. to put on special sleepers for consumptives and who, in various other ways, will hurt the feelings of the consumptive.

The writer is a believer in the principle of "The greatest good to the greatest number" and, in the present instance, he believes that the interests of the non-consumptive public and of the tuberculous, are best served by compulsory segregation of the latter. But, he is not devoid of sentiment and perhaps we are going too far in sanitary self-protection. However, if we are going to be unselfish, let us be so with our eyes open to the danger and let us be consistent. There is no use in exempting a fatal and prevalent disease from quarantine, while imposing similar cruelties on patients afflicted in other ways. A few days ago, a girl suffering from trachoma came to America to join her lover. They were separated and, while being deported, the girl threw herself from a car window and was killed. There are or recently have been, several lepers imprisoned in this country, not only suffering the mental torture of the social outcast but lacking ordinary physical comforts, yet this disease is not especially contagious. Within the last few years, hundreds of patients and thousands of their relatives, in good health, have been subjected to discomfort, financial loss and inconvenience, on account of smallpox, a disease to which almost absolute immunity exists, on the part of those sensible enough to observe simple and inexpensive precautions. Many a mother's heart has been almost broken, by the sanitary laws regarding the isolation of the ordinary infectious diseases and even by the restrictions regarding funerals and interments. Let us be guided either by selfish wisdom or by sentiment in the control of infectious diseases but let us be consistent. In ignoring tuberculosis while quarantining other diseases, we are straining at a gnat and swallowing a camel.

—It is reported that the Cincinnati College of Medicine will not reopen this autumn, because the state law requires such rigid entrance examination that the number of students is reduced below the limit necessary for the support of the institution. Other schools will probably be closed for the same reason, thereby diminishing to a certain extent the ranks of a profession already overcrowded.

EXPERIMENTAL STUDY OF KIDNEY DISEASES.

BY M. SHELLENBERG, M.D.

LOOMIS was probably the first to call attention to the fact that it is not hypertrophy but a failing heart which is to be most feared in Bright's disease, and that, while writers have much to say with regard to cardiac hypertrophy, very little importance is given to cardiac degeneration following hypertrophy. The hypertrophy is conservative and compensatory, and should not be arrested if it could, except by removal of the condition which produces it. His clinical and pathological studies have forced upon him the conviction that simple cardiac hypertrophy is not found in so large a proportion of cases of Bright's disease as are reported by English and Continental clinicians. Extensive changes in the glandular structure of the kidney when found with it are due to primary arterial disease rather than to renal trouble. The most constant changes met with in Bright's disease are dilatation of the cavities and degeneration of the heart walls, and, in most cases where tubular and interstitial changes are found in the kidneys in addition to obliterative arteritis, cardiac hypertrophy when present was associated with degenerative changes in the heart walls and dilated cavities. If there were no obliterative changes in the vessels no true cardiac changes are apt to be found.

Potain, an excellent authority, believes that the increase in arterial tension can be ascribed to three hypotheses: (1) augmentation of cardiac energy; (2) increase in the mass of the blood; (3) exaggerated resistance in the peripheral vessels. Taking these up, he endeavors to show that the first is absolutely without effect. The second, increase of the mass of the blood, he disposed of in the same manner while the third agency, the contraction of the peripheral vessels, is regarded as of greater importance, the influence of the contraction of the little vessels having been demonstrated by physicians and pysiologists, and the greater the contraction of the vessels the more the tension is increased. Some have localized the resistance in Bright's disease in the arteries, since these are thickened and very hard; but the answer to this argument is that there are many other subjects with the arteries thus affected, in whom the pressure is small, amounting to one to one and a half centimeters, while in Bright's disease it is often ten. The capillaries are undoubtedly the seat of trouble, for, notwithstanding the high tension in the arteries, the circulation in these vessels is reduced and anemia follows. In some forms of kidney disease the renal capillaries are destroyed to a considerable extent, yet their destruction is not sufficient to explain the high degree of tension in the arteries. Nor do we need any permanent increase in arterial pressure in consequence of nephrectomy or ligation of the renal arteries. If it were true that the resistance lay in the renal capillaries only, then an exaggeration would appear in the peripheral circulation, whereas we know that the reverse is true.

It was Bright himself who suggested that it was impurity of the blood which caused the capillaries to resist its onward flow. Potain tested this by injecting urea, uric acid, and extractives into the blood. As a result there was a slight retardation of the current, but too slight to be responsible. He thinks it is necessary to admit an alteration in the capillaries themselves, either in their structure or vitality, and quotes the now generally rejected arterio-capillary fibrosis of Gull and Sutton. Potain explains these phenomena by reflex action; he states that the kidney is the point of departure for certain reflexes going to the periphery, as when uni-

lateral lesion of the kidney produces one-sided edema of the body, whence one may suppose the opposite condition possible—a reflex producing vascular contraction and peripheral ischemia. This he regards as supported be the results of those experimenters who, having interrupted but not occluded the nourishing artery of the kidney and ligated the ureter, had produced a renal affection with increased arterial pressure and hypertrophy of the heart. This pathological life of the kidney may be supposed to give life to reflexes which act upon the heart and peripheral circulation. In hypertrophy, he states that in this condition of the heart, from any cause, there is an increase in the width of the muscular fasciculi rather than in their number, and a proliferation in the nuclei and fibers of the intermuscular tissue, involving all connective tissue and predominating in some parts, as the pillars; and he thinks the overgrowth does not add but rather retards the growth of the muscular structure.

As the connective tissue develops the vascular channels grow narrower, interfering with the nourishment of the muscles and involving the veins of the hepatic system. In this way the heart is hypertrophied, sclerosed, and degenerated. As to its causes, it has been suggested that hypertrophy is due to the retention of pure blood, which may have a slow and secondary action, while it is well known that hypertrophy may occur without it. Reflex action is again called into play to produce the frequent contractions, but this also is regarded as insufficient. He concludes that the most important factor is the resistance which the heart meets in the arterial pressure, which is compared to the resistance afforded by a narrow aortic orifice.

The infectious factor in Bright's disease may produce either inflammatory or degenerative changes simply in the kidney and hence be the specific cause of such changes in a certain sense or it may be part of a general infection, such as malarial or syphilitic or lead infection.

A typical case of chronic nephritis produced by the action of lead is reported by Jaccoud. The patient had been exposed to the action of lead for many years, without inconvenience. At last he began to complain of intense headaches, of slight failure of eyesight, of edema of the legs, of an urgent necessity of nocturnal urination. Albumen was found in the urine. The case succumbed, within a month after entrance into the hospital, from uremia, and the autopsy confirmed the original diagnosis of a chronic interstitial nephritis. Similar to lead and the other members of its class can be mentioned the products of incomplete or pernicious digestion. The incomplete transformation of the albumens leads to the production of a relative albuminemia, and from this by easy steps an albuminuria; so, too, the various toxic substances from perverted digestion are brought to the kidneys, and in their excretion produce a similar series of events. As long as forty years ago Semmola noted that the amount of albumen excretion in Bright's disease is not dependent so much upon the state of the renal alteration as upon the blood condition.

Schutze in a brochure on floating kidney has studied it from the etiological standpoint. To ten cases of his own he has added ninety of the more fully reported cases collected in literature, analyzing the whole number. He states that Epstein found floating kidney only five times in 3,658 necropsies, or one in 732 while Landau says that the movable kidney tends in the cadaver to settle spontaneously into its normal position, and thus to be overlooked; hence, the importance of examination in every case, as already suggested. Landau, from an examination of records from 1870 to 1879, was able to find the records of only four cases out of 6,000 necropsies. Although it may be congenital, the most common period of life is from the twenty-fifth year. Ten cases, however, are noted in the first decade of life and four in the seventh. In 474 cases 405, or 85 per cent., were females; 69, or 15 per cent., males. The right kidney is much more frequently displaced than the left; according to Schutze's observations, the right 65 times, the left 18, both kidneys 14 times.

Schutze's cases show that laborious occupation and strong bodily effort seem to be of less importance as factors than general relaxation of tissues due to inactive, sedentary life. The events of such a life in a woman, menstruation, abortion, miscarriage, parturition, are of great etiological moment, and to this general category must also be referred dislocations and diseases of the uterus and appendages. Pregnancy has been frequently ascribed as a cause for dislocation of the kidney, but Fritsche has demonstrated that the gravid uterus does not drag the kidneys from their normal position, but tends on the other hand to restore them when displaced. But very important among the causes is the relaxation of the abdominal walls following frequent child-bearing, and the pendulous belly consequent to this condition. Still Schutze was able to find only two cases of pendulous abdomen in his cases of floating kidney. Wasting diseases, violent concussions of the body, tight lacing, hydronephrosis, and secondary diseases of the kidney are assigned as causes by various writers.

Within the past fifteen years the reliance upon albuminuria as the guide to the degree of nephritis present in a case has diminished regularly. The study of the pathological physiology of the kidney has shown so varied sources of albuminuria that albuminuria arouses scarcely more than a suggestion of renal disease.

Taking up the much vexed question of physiological albuminuria Senator believes that urine is a product of transudation, and contains ordinarily a certain amount of albumen, like all transudation-fluids. This normal amount of albumen in the urine may be increased without actual fault of the kidneys until so-called "physiological albuminuria" is produced, which he believes must be regarded as similar to physiological glycosuria or oxaluria. But Lecorche and Talamon deny the possibility of physiological albuminuria. Not that albumen may be found in the urine of a large proportion of the population, but that the frequency of the symptom makes it a physiological condition. Nor the mere appearance of health in such cases indicates the condition of the internal organs; and they claim there is no positive point of distinction between the physiological albuminuria and that due to genuine renal disease. They believe every albuminuria of origin above the bladder is indicative of some lesion in the renal structure. In the earliest manifestations of albuminuria and in its slighter degrees the lesion is usually located in the renal glomerules,—in other words, consists of a glomerulitis—and this may be associated with inflammatory vascular and interstitial changes or with degeneration in the epithelial lining of the urinary tubules. The proportion of albuminurics increases with advance in years reaching between the ages of 60 and 90 years the proportions of 50, 60 and 70 per cent.; the frequency of albuminuria corresponds with a similar increase in the occurrence of renal lesions. To such an extent does this increased frequency of renal lesions occur with advance of years, that, of 75 aged persons dying without having presented symptoms which were directly referable to the presence of disease of the kidneys, 56 showed, at autopsy, kidneys in a condition of alteration, so marked that

they could only have come from a long-continued disease. Davis considers the relation of albuminuria in persons apparently healthy and life-insurance. He concludes that there is warrant for acceptance of such risks, at least for a short period, under certain conditions.

These rules are, briefly, as follows: "1. That there be no history of Bright's disease heredity in the family, and no evidence of renal disease in the individual other than albuminuria. 2. The candidate should be under 40 years of age, free from history of gout, rheumatism, syphilis, plumbism, acute nephritis, intemperance, chronic dyspepsia, or edemas. 3. There should be no evidence of disturbance of the cardiac or vascular systems. 4. There should be no retinal changes. 5. The physical appearances of the urine should be normal, or at least not indicate an excretion of solids less than normal. 6. The albumen when precipitated should not exceed one-eighth of the urine, and there should be a daily period when the urine is free from albumen. 7. There should be no tube-casts present; when, however, the specific gravity and quantity of the urine are normal, the author does not regard a few hyaline casts as of especial consequence."

Every albuminuria may be the start of Bright's disease, but yet Bright's disease need not necessarily follow every albuminuria. To accept such a candidate might be rash, for in six months or a year the albuminuria may become an undoubted case of Bright's disease; to reject the candidate may be wrong, for in six months or a year the albuminuria may have gone. There seems to be only one absolute rule and this is to wait and watch the case carefully.

While albuminuria minima persists without other symptoms, the right to accept or to refuse the candidate should be held in abeyance and postponement for six months, a year, or more, will permit the true state of affairs to be known, giving the renal lesion time to develop into a decided condition, or to reach definite health. Purdy in an article upon examination of the urine for life insurance takes this position; for, while he recognizes the growing belief among many authorities that the so-called "physiological albuminurias" should not debar an applicant from life insurance, the fact that small quantities of albumen in the urine are no evidence whatever that the kidneys are not seriously involved is impressed. The occasional presence of albumen must not be regarded carelessly. The slighter traces of albumen in the urine may be of grave significance. Purdy mentions an instance where a special examination of a case was referred to him by the medical officers of a prominent life insurance company with a mere trace of albumen in the urine. He found other evidences of renal involvement, and advised strongly against the risk; but another company took the risk for $10,000, and before the second annual premium, the man had died. Again along this same line Brennan, an examining physician in a life insurance company, believes that while cases of intermittent or physiological albuminuria may be looked upon with slight apprehension, frequently they result in positive renal alterations. He examined at postmortem a case of intermittent albuminuria which he had examined during life several times, and had found albumen only once out of eight examinations. He reports that in the kidney there was marked vascular injection of glomeruli, the epithelium of the convoluted tubes contained a small amount of fat, in minute but distinct drops. The glomerular capsules were thickened by fibrous tissue in concentric layers while scattered through were small areas of round-cell infiltration. The anatomical diagnosis set down from the postmortem findings was venous engorgement of lungs, liver, and kidneys; chronic aortic endarteritis; slight chronic nephritis. Other intermittent cases of albuminuria are due to mental strain, excessive eating of eggs, and from a diathetic origin.

In doubtful cases it is well to depend upon other evidences that might be met in the urine of the completeness of the function of the kidneys. Millard states his opinion, that albuminuria, natural or artificial, only occurs as the result of pathological changes in the kidney, and can never be normal or physiological. In making autopsies he finds absolutely normal kidneys are rare, the microscope showing some degree of cirrhosis, of cloudy swelling of the epithelia, or glomerulitis. As to the prognosis of such minimal or intermittent albuminurias, Millard states that in but a small proportion of cases has he known it to disappear permanently if existing for a long period. He would hesitate to say that the albuminuria is cured unless the urine is free from albumen for a long time, arterial tension is found to be absent, the heart to be normal, and the general health to be excellent.

There are doubtless many albuminuric cases who are not unfit subjects for life insurance; but, it is impossible not to attach any prognostic value, direct or remote, to the condition. Albuminuria indicates, according to Millard, a lesion of the glomerular filtering membrane, and nothing less; and to form an idea of the extent of the lesion, we must look for other sources of information. Jasiewicz asks the question "Is There Such a Thing as a Physiological Albuminuria?" He answers the question negatively. In a case of slowly increasing albuminuria which he had had under observation for some years, the patient, was apparently in good health, excepting for the albuminuria. The urea was decreased, and hence, the total solids lowered, so the author regards the case as one of evolution into chronic Bright's disease.

In Jackson's experience from a large number of urine analyses from all sorts of cases, he has never seen one case of albuminuria in which a microscopical examination did not disclose some pathological condition of the kidney or uropoietic system. Occasionally one examination would be negative, but repeated searchings were invariably attended with the discovery of pathological evidence. Other writers regard cases of persistent albuminuria in those who present no other evidence of renal disease as serious. Many instances of undoubted Bright's disease, as proved by the postmortem findings, have been reported in whom the symptom albuminuria was present but rarely and then, as a rule, in minute quantities only. Winternitz, of Stratsburg conducted a series of carefully-conducted examinations of normal urine in concentrated condition, using delicate test reagents for albumen, with a control series with the same methods, comes to the opposite belief to that of Senator. He detected between one and two parts of albumen in 100,000 parts of urine; and yet in normal urine he could never find the slightest results with the same reagents. The presence of albumen in any quantity in his conclusions is not characteristic of normal urine. He acknowledges that often small amounts do occur in what may be called "normal urine" tentatively, but this amount cannot reach the proportions mentioned by certain writers without pathological import.

Cystalgia which is a cystitis without peculiar anatomical features but marked by excessive and intense pain, long duration, continued manifestation of symptoms without any long remission, entirely unrelieved by the ordinary therapeutic measures, constitutes a new variety recently brought forward by French writers. It oc-

curs especially in women with tubercular cystitis, following an overdistention of the bladder in lavage or careless use of vesical instruments. Frequence of micturition and pain are the two symptoms which from their importance and tenacity distinguish this variety from other vesical inflammations. In a case of Marieux's the patient urinated 120 times in the twenty-four hours; the totality of urine is, however, but little increased. The pain is deep-seated, ill-defined, usually referred by the patient to the lower part of the bladder, rarely to the gland, the base of the penis, the perineum, or the anus. Jonnesco describes a remarkable case occurring in a man aged 30 years, following fracture of the spinal column in the lumbar region. Upon postmortem section the bladder walls were found to be hypertrophied and in a state of advanced fatty infiltration, subperitoneal and intraparietal; there was a large intraparietal abscess communicating with the contracted bladder cavity, with several pelvic collections of purulent material and with a large crural pocket of pus, all probably caused by the primary purulent cystitis. Ureters and renal pelves were characteristically involved, and both kidneys were found completely degenerated.

A case of rare simulation is reported by Dumas, in a young and apparently healthy man who had been a hospital inmate for some days under the diagnosis of cystitis. His urine contained blood, and over the bottom of the vessel there was a peculiar, thick, mucoid material. Suspecting malingering, Dumas soon had the satisfaction of obtaining a confession of having put the blood from his gums into the bladder by means of a catheter which he had secreted, and the mucoid material was produced by slipping starch surreptitiously in the chamber.

Driggs has reported a remarkable case of total suppression of the urine lasting for fifteen days. A man 32 or 33 years of age, weighing 190 to 200 pounds had ushered in this condition by an attack of renal colic. It had continued 14 days in spite of all treatment. During this period he had had several attacks of nephritic colic, confined entirely to the right side, and had also gouty rheumatism. After each attack of colic he had passed a small, elongated uric acid calculus about the diameter of a knitting-needle and three-fourths of an inch long. There was uneasiness and discomfort, rather more marked on the left side.

There was no urinous odor about the body, but there was finally in the breath. There was no stone in the bladder nor urine and absolutely no symptom of uremia. Laparotomy was decided upon, but both kidneys were found to be impacted with calculi, and, it being evident that no further surgical interference was possible, the wound was closed. Six and a half hours after the operation the patient had passed 16 ounces of urine, and after this passed urine freely, eight ounces in the following night. Subsequently, however, he did badly and died 48 hours ofter the operation. The autopsy discovered both kidneys impacted with calculi.

Traumatism of the kidneys is rarely mentioned as the cause of Bright's disease, although it probably merits an important position. For example, Odin has detailed a cause of acute nephritis which appeared eight months after abdominal injury. After the injury, a hematuria appeared, which persisted for four days, with intense pain and difficult micturition. In connection with this case, he describes two cases of Chevains, and a third by Roussel. The last case was a man, who after injury involving the kidneys, exhibited hematuria, pain and difficult micturition. He was treated in a hospital for some days, being discharged apparently cured. Some months later he came back with an acute Bright's disease, without other cause to account for his condition.

Other instances are equally suggestive, and the relation between the primary injuries and the cases of renal inflammation is apparent. Owing to the injury, the epithelial or connective-tissue elements may be so affected as to degenerate, or possibly the injury produces a reflex hyperemia. Again, microbic elements may find a good soil for their development in devitalized tissues.

Another case where a man fell from a platform, about five feet, receiving the force of the blow on his left side, below the short ribs has been reported by Dock. He began to be nauseated, vomited and passed bloddy urine. Dock decided upon an expectant policy on account of the microscopical appearance of the urine and the amount of blood in the secretion. The case recovered with no untoward symptoms except a chill about three weeks after injury, which was however unaccompanied by rise in the temperature. In indirect violence the kidney lesion always involves the hilum, while direct violence leads to laceration of the organ. Again a man fell considerable distance, receiving the force of the fall upon the back which means more nearly direct violence to the kidney. The autopsy revealed a renal long teat. Campbell records two cases of renal rupture, in which he was able to corroborate the diagnosis by autopsy. A sailor was struck by a taut rope in the right side. After several days death ensued, and a large, wedge-shaped piece was found nearly cut out of the liver, and a deep irregular gash cut into the kidney on its anterior surface. At the autopsy it was seen that already nature had made efforts to heal.

Many anomalies in the kidney have been reported from time to time, among these Wallace reports an anomaly of position and formation of the left kidney. The right kidney was double the normal size, containing several small subcapsular cysts, while the left organ was found in the pelvic cavity behind the rectum, lying below the rim of the pelvis, in an oblique position, divided into two distinct parts, each part provided with separate pelvis and ureter. But the ureters from these parts united into a common duct before entering the bladder.

Tuffier classifies floating kidney into three forms: the *painful,* the *dyspeptic,* and the *neurasthenic.* Another class may be recognized where these may be more or less combined, or may have their symptoms to a greater or less degree masked by complications. The first of these forms is that most often encountered, and is marked especially by pains of varying character and intensity, and capable of variable explanation, directly referable to the region of the kidney. The second, the dyspeptic form, does not suggest the nature of the trouble so directly, but presents a more devious complexus of symptoms, which are to be referred rather to the gastro-intestinal symptoms, from slight dyspeptic symptoms to intense nausea, intestinal pain, and vomiting. The writer explains this class by the direction of displacement and the relation of the displaced organ to the stomach, but confesses incompleteness of his proposition, and acknowledges the inexplicable nature of many instances. Finally, a number of cases present a peculiar and overwhelming predominance of nervous symptoms, and are to be classified as a separate group, the neurasthenic variety. The nervous symptoms are apt to be those of hypochondriasis or of hysteria, and in some instances at least, have been entirely relieved by relief of the mobile condition of the kidney. There is a difference in application in the terms "floating" and "movable" kidney, the latter being used in connection with organs whose movements have been acquired

in some means, the former in connection with congenitally movable kidneys,—those congenitally provided with a distinct mesonephron. The prognostic significance of blood pressure in acute renal disease has been carefully studied by Broadbent who said that, although higher arterial tension was present in almost every form of kidney disease, he had twice seen low tension when symptoms of renal cirrhosis were present. In acute renal dropsy when the pulse-beat is short and easily arrested, temporary dilatation and weakness of the left ventricle is indicated. A continued defect of tension might be due to cardiac weakness, and this is of unfavorable prognostic import. In other cases it indicates diminished peripheral resistance, which is also of bad import. The almost certain cause of albuminuria was the languid movement of blood in the renal capillaries, and the indication here was to improve the circulation. Under a mixture of iron, sulphate of magnesia, and nux vomica and digitalis the dropsy diminished, the pulse became of better volume, less compressible, and the albumen diminished to little more than a trace. The patient was allowed to get up too early, and this brought about an increase in the albuminuria. Imperfect development of blood pressure showed the nature of the patient's constitution and might be made use of in prognosis, as indicated by long illness and the necessity of the use of vascular stimulants. Calomel and salol relieved high tension while low tension was benefited by nux vomica and iron.

Smith declares this explanation was both unnecessary and deficient in probability. Putting their influence on one side, the three prinicpal factors in the production of arterial tension are heart power, peripheral resistance, and the mass of blood to be propelled. With increased peripheral resistance, heart muscle developing and tissue waste going on at an early normal rate, we have the most typical examples of high tension, as seen in men who, though suffering from chronic granular kidneys, are struggling to do the work of health. If the heart does not develop power in proportion to resistance, the pulse is persistent, but not so hard. Persistency of the pulse, as shown by the sphygmograph, commonly spoken of as a trace of high tension, does not necessarily indicate grave tension, nor even absolutely increased peripheral resistance. Shortness of pulse is, however, a different affair, and is seldom found with increased peripheral resistance common to all forms of Bright's disease. Any interference, however, with the mass of blood that is propelled may, for a time, take away the tension and persistence and leave the pulse weak and short.

After bleeding and sometimes after purging, the course of the disease had so interfered with the mass of blood as to produce shortness as well as compressibility of the pulse, and the condition can therefore be explained without calling on the hypothesis that the capillaries and arterioles were relaxed. The heart was very weak, and there was no increased tissue change to produce excess of excrementary matter and, therefore, of resistance, so that there was no likelihood of any increase of tension. Compressibility of pulse is not uncommon in the latter stages of chronic renal disease, yet such shortness as to be suggestive of diminished peripheral resistance is chiefly to be met with in cases in which some intercurrent malady, such as paralysis, has so altered the patient's general condition as to food, waste and blood production that the mass of blood to be moved is lessened. Men whose pulses have formerly been so tight as to burst their arteries, leading an invalid, semi-vegetable existence being still sufficient to oppose the passage of quantity.

POINTS TO BE REMEMBERED IN MEDICINE.

BY R. HARKNESS, M.D.

IT is well to recognize the fact that in children the area of dulness of the heart is different from that in adults, as the higher level of the diaphragm in children gives the heart not only a higher position in the body, but one which is more horizontal. On this account, alterations in the dull area do not diagnose between effusion and dilatation. Under these circumstances, it is better to depend upon the existence of absence of pericardial murmurs, especially those heard in the upper region of the cardiac area.

There have been, from time to time, reported cases of tumors of the heart, for example, in thirty published cases of primary tumor of the heart the structures were found to be as follows: 1 cyst; 2 syphilitic tumors; 2 lymphomas; 3 cancers; 6 fibromas; 7 myxomas; 9 sarcomas.

At the same time this condition is so rare that the possibility of the existence of these tumors scarcely ever comes up in the diagnosis of heart trouble.

Venous murmurs can occur in the most unusual positions, for example, MacKenzie has reported a case in which the murmur was audible at the base of the right lung and was loud and blowing, continuing during the whole period of the cardiac action. It was similar in character to the murmur heard from arterio-venous-aneurism. There were several suggestions made as to its origin. One was that it was due to stenosis of the inferior vena cava at the level of the diaphragm. The other was that it was due to hepatic angioma. There have been about 100 cases reported in which obliteration of the aorta occurred, the stenosis being situated above or below the duct.

Brunner has reported a case in which a man thirty years of age, who died of phthisis without especial symptoms, was found to have a collateral circulation which was served by superficial vessels from the sub-clavians, although in this case the diagnosis was made of this condition during life as they were detected in situ.

From time to time cases are reported of musical murmurs of the heart. These seem to be associated more with aortic disease, while they have been reported in mitral trouble. They are explained by the fact that rapid oscillations of long appendages occur in the blood stream, for example; an aortic flap partly turned from its attachments or long aortic vegetation, or the same difficulty at the mitral orifice will produce the condition. It is well to remember that murmurs which are audible at a distance from the chest are generally aortic regurgitant in origin.

Static electricity has been used for some years, not only in the treatment of cases of insanity, but also in phthisis. The method consists in inhalations from the discharge of electricity towards the mouth of the insulated patient.

Expectoration is said to diminish under this treatment and the general condition of the patient improves.

All well-equipped hospitals for the insane are now using this form of electricity in the treatment of various forms of insanity. In fact, there is scarcely a condition it would seem which would not be benefited by the use of this stimulating old-time form of electricity.

The question whether the air expired by consumptives is infective in itself has been taken up by Curry and Plebs. They have come to the conclusion that this danger has been very much overestimated, although they have found bacilli in some of the droplets violently coughed from the mouth.

Baldwin has suggested that the danger from tuberculous cattle may be exaggerated and the infection may arise from the fact that living tubercular bacilli are not infrequently present on the hands of those who are careless in the use of clothes, handkerchiefs, etc.

The Proper Treatment of Diarrheal Disease.—The medical profession has been divided for many years as to the most scientific principle which can be applied to the treatment of this disease. On the one hand, a class of practitioners have been in favor of the liberal use of opiates and astringents, while, on the other hand, there are many who depend upon the free use of salines. The profession, as a whole, has occupied middle ground, believing that the judicious employment of both classes of remedies is the best, together with the occasional use of the so-called intestinal antiseptics. Washing out the stomach has been a great feature in the treatment in the hands of those who have become skilful in it, while the frequent use of high enemata has also many advocates.

We are still in the dark as to the etiological relation of micro-organisms to the various forms of diarrheal affections, and therefore, much of our conclusions must be based upon guesswork.

Vaughan has taken up the question of the function of the white blood corpuscle to secrete or manufacture antiseptic substances so that the blood may have this so-called natural antiseptic property. With the use of his nucleins he has been able to get most important results, for by them it is possible to stimulate cellular activity, increasing the function of the white blood corpuscles and supplying the system with material by which a victory is the reward instead of defeat. Of course, with this, other means and measures for the protection of the patient should be employed; combining this class of remedies with those ordinarily used in intestinal diseases it is possible to accomplish a considerable amount of good.

A curious question some years ago came before the courts of the City of Philadelphia as to the necessity of a druggist labeling a poisonous drug when it had been ordered in a prescription by a physician. The case was one in which a woman ate a number of strychnia pills from which she died. The druggist was arrested because he had not placed a poison label upon the bottle containing the medicine. It was proved by the druggist that the medicine had been ordered by prescription of a physician and that he had simply placed upon it "One at meals as directed by Dr. Atlee." The law of the State is that druggists, in order to prevent mistakes in the sale of poisonous drugs must throw every impediment in the way of malicious and wicked persons obtaining them for murderous purposes and to facilitate the detection of such persons when their malignant purpose has been accomplished, but the judge in reviewing the case stated that this does not mean to restrict or narrow the sale of the drugs for legitimate purposes or where directed to be used in the ordinary code of legal practice known at the time. He states that there are two methods of selling drugs, one by prescriptions of physicians and the other on the personal application of a responsible habitant of the place. The prescription furnishes the first class all the information which is required by law, while the procedure of the sale made upon the personal application of the inhabitant forms the second. The judge decided that no Legislature could have intended that a prescription of a reputable physician should be sent by the druggist to the sick room with the word "Poison" marked upon it, for, he states, that it would end all medical treatment and would place the power in the hands of the druggist to destroy all the benefit of the physician's remedy. Therefore, such a law would be destructive of medical science, would be unreasonable and against the spirit of sound legislation. He further states, in concluding, that if the unfortunate people, who, in a spirit of banter had eaten this box of pills, had been gifted with the smallest amount of prudence or ordinary caution in observing the directions upon the label they would not have been the subject of sickness and death as has resulted. He, therefore, decided that the drug clerk had not been guilty of any breach of law, and he was discharged.

This is undoubtedly the sound reasoning in the case, for any attempt to stamp the word "Poison" upon a physician's prescription would practically destroy its value.

The introduction of antipyretic treatment in typhoid fever appears to have lessened the frequency of delirium; I quote Betke to the effect that prior to the use of the cold water treatment delirium occurred in 26.7 per cent. of the cases in the Basle Hospital, while since its use delirium has been reduced to 19.3 per cent.; also, that the mortality of delirium cases, which before the use of cold water was 43.5 per cent., has been reduced by that treatment to 30.5 per cent. Ross, in discussing some forms of paralysis which follow typhoid fever, first showed that while typhoid is a great strain on the nervous system, bringing to light its weaker points and causing general exhaustion and anemia, it produces sometimes nervous lesions in addition to these. These lesions consist in proliferation of connective tissue about the nerve-trunks, usually, but also parenchymatous degenerations of the spinal cells and cerebral cortex, resulting in paralysis, paraplegia, and sometimes loss of sensation. These are, however, usually recovered from. They are undoubtedly caused by the typhoid poison, not the fever exhaustion or the anemia. The signs of exhaustion of the nervous system are constant and generally in proportion to the severity of the fever. The nervous phenomena are almost invariably both motor and sensory.

Richards, in studying glycosuria following the experimental injection of adrenaline, brings out the following statement: Adrenaline, when given intra-peritoneally, is capable of producing a marked glycosuria in which the percentage of sugar may rise to 9 per cent. and the ratio of nitrogen and dextrose to 5 per cent.

Adrenaline-glycosuria does not depend upon the presence of a diestatic ferment stored or formed by the action of the suprarenal gland. He found that injections of the drug are occasionally followed by destructive lesions in the pancreas and in the gastro-intestinal tract. He also found that following fatal doses, the cells which compose the Islands of Langerhans were the seat of glandular degeneration. He also found that equal doses of adrenaline in intra-peritoneal injection proved far more powerful in the production of glycosuria than injections under the cuticle.

In the ordinary patient suffering from albuminuria, who has a clear urine and absence of pus or blood, the condition may be found to come from one of the following causes:

First.—A physiological disposition toward the condition.

Second.—Tubular desquamation due to some recent infection, such as scarlatina, or from a calculous condition of the kidneys, or, finally, recent injuries in the lumbar region.

When the albuminuria is due to renal gravel it is usually transitory in nature.

As pointed out in a recent paper by Bacon, the cutting of the umbilical cord is probably the first surgical operation to which the majority of human beings are subjected, and therefore, it is one of the first sources of pos-

sible infection. Despite the fact that it has been done for ages, before there were any surgical principles to guide its technique, in some way or another infants have escaped the dangers of hemorrhage and infection. Bacon attributes this to the fact that Nature's arrangements are more efficient in peoples in a state of nature than in a highly civilized condition. He believes that the dirty and naked savage is more able to resist outside influences than the person who protects himself carefully, just as plants grown in conservatories are not as hardy as those which grow out of doors.

He recommends that as soon as the head is expelled a clean towel be wrapped around the body of the child in the region of the cord. This towel is to be applied as soon as the baby is born. Then the child is to be wrapped in a sterile blanket until the cord ceases to beat. It should be tied 4-5 c.m. from the body with sterile tape, the vessels being emptied out toward the placenta by pressure of the thumb and forefinger. After this he simply uses sterile dressings.

Crofton has taken up the subject of the circulation of the bile acids in their path from the intestinal mucous membrane to the liver. He has found that it was impossible to find them in any appreciable quantities in the blood, although minute quantities can be determined in the lymph or thoracic duct. From this he assumes that they were formerly combined with the mucin or taken up by the phagocytes, and therefore, he submitted 50 c.c. of the coagulent obtained from ducks' blood to the process of artificial digestion and he found no bile acids at the end of 48 hours. Then mixing 50 c.c. of blood with 300 c.c. of absolute alcohol and extracting it with boiling water, and testing it for bile acids, he found that they were absent, but he found the bile acids in the blood corpuscles. From this he comes to the conclusion that the discovery of the bile acids tends to prove that it is possible to have a hematogenic jaundice.

"Geographical Distribution of Typhoid Fever in the United States" has been studied by Johnson. He recognizes the types as follows: (1) True typical typhoid fever; (2) true typical malaria (remittent or bilious) fever; (3) numerous obscure forms, variously reported as simple continued fever, gastric fever, autumal fever, etc. True typhoid fever and remittent fever are clearly defined, but the other terms are used to designate, sometimes a case of typhoid, sometimes of remittent fever. As regards the term typho-malarial fever, much would be gained by abandoning. Riordan states that typhoid fever is rare in India, and that the continued fever which has been described as typhoid in India is, in fact, a form of malarial fever; going on to say that in a few cases of remittent fever without any suspicion of enteric, he has observed what he wishes to describe as the characteristic lesion of this malarious enteritis, viz.: considerable thickening of the last two or three inches of the ileum, increasing gradually at the site of the mesenteric attachment, with deep, irregular ulceration, ragged margin, and ragged floor, as if a Peyer's patch, sometimes two, with several solitary glands and the intervening mucous membrane, eroded.

The Treatment of Extrauterine Pregnancy in the Later Months.—The method of treatment of extrauterine pregnancy occurring in the earlier months is now pretty well settled among surgeons. Electricity, which had its advocates, has now dropped into disrepute, while medicine offers no relief. There are cases on record, however, in which extrauterine pregnancy has passed beyond the fifth month, and the child was known to be viable—what should be done under these circumstances? The fact that there is a living child complicates the question. The possibility of a sudden and fatal termination is so imminent that the result amounts almost to a gamble. It is, of course, impossible to promise favorable results under all circumstances, but with the advances in abdominal surgery within the last 20 years it is possible to do much more than was possible formerly.

The great trouble in operating for extrauterine pregnancy at this period is handling the placenta and many operators have been deterred from operating until it was known that the child was dead and the placental vessels had atrophied. There are, undoubtedly, cases on record of women who have lived for years with a mummified fetus, but, on the other hand, many have died from visceral perforation, from exhaustion and from various forms of sepsis.

It is, undoubtedly, the proper teaching that in extrauterine pregnancy the fetus should be removed as soon as possible.

It makes no difference whether it is the fourth month or the ninth month. Of course, the dangers are greatly increased with the development of the placenta, for there is a greater surface to bleed and greater danger from the subsequent hemorrhage. In fact, it may be necessary in some cases to leave the placenta undisturbed with its cord protruding from the lower end of the womb and removing it as soon as the circulation has atrophied.

Lawson-Tait reports two cases in which the cord was left and became encysted and absorbed. Lusk has reported a number of cases where coliotomy was performed with the fetus living, and he believes this operation is now beyond the realm of chance.

In dealing with the placenta it is well to attack its entrenchments by enucleation in the rear and ligate its vessels, controlling the general ooze from the small vessels and from the surface by packing with iodoform gauze. In one case in which Lusk operated himself he saved his patient by compressing the abdominal aorta while removing the placenta and packing gauze in the Mikulicz pouche. In two cases reported by Jessup and Taylor the placenta was left untouched with the cord hanging out of the angle of the abdominal incision and the putrescent placenta was two and a half months in discharging itself and curing the patient, but Lusk says, in referring to these cases, that they both belong to the domain of miracle and do not invite imitation.

Vaccination and Vaccinia.—The considerable number of affections which complicate vaccination are worthy of more attention than they have as yet received although it is true that most of them are mild and harmless in their nature. For example, the question of the red areola and its relation to the vaccination process has never been thoroughly investigated, and authors are by no means agreed as to its character. Gatzen, in elucidating this subject, examines into the etiology of vaccinal erysipelas,—the most important complication of vaccinia. The question here arises whether vaccinal erysipelas arises under all circumstances as the result of an accidental infection. For, if Bohn is correct, the potentiality of erysipelas exists in all vaccinal lymph, from which it follows that all cases of vaccinal erysipelas, excepting such as result from direct infection of the vaccination wound, are vaccinal and not accidental. We may here call to mind what Bohn calls "late erysipelas," when the red areola, instead of lasting ten days, as is the rule, passes beyond the original boundary, commonly with high fever and occasionally involving a considerable area. Unfortunately, the literature of the subject is wanting in fully reported cases.

It is, indeed, remarkable in the present state of our knowledge that no microscopic search has, up to this

time, been published on vaccinal erysipelas in connection with the normal areola, although a number of fatal cases have been reported within the past few years. Gatzen gives some account of the ordinary course followed in the development of the vaccinal lesion. This is various, according as the vaccinated subject may or may not have been vaccinated or have suffered variola previously. In unvaccinated persons the course is uniform. Among the latter a small papule appears on the fourth day after vaccination, which in twenty-four or thirty-six hours develops a vesicle. The inflammatory process, which in a peculiar way changes the papule into a vesicle, develops in a centrifugal direction from the point of vaccination, so that the papule is raised upon a red base. Papule and vesicle are to be regarded as the results of a higher grade of that inflammation of the tissues which has been evoked by the vaccination. While the vesicle is increasing in size up to the seventh day the circular dermatitis extends to a greater or less degree in the neighborhood, and this dermatitis, which is never absent, although sometimes very narrow, keeps on extending until the end of the ninth or the beginning of the tenth day. When the course of the affection is normal the extension of the redness ceases on this day, the center, near the pock, becomes higher and then the circumference also, and on the tenth day there is frequently observed near the already cloudy pustule a pale red or colorless circular areola, surrounded by a peripheral red ring. This last local symptom of the vaccinal process disappears, and then remains only the regenerative process, which had already begun in the pustule on the eighth day, and now goes on to drying, crusting and scarring. How is the appearance of the red areola to be accounted for, that is, what is its cause? Is it dependent upon the vaccinal poison or only accidental? Again, how can we account for the fact that in persons vaccinated for the first time, the areola reaches its extreme development so regularly upon the tenth day? Gatzen states that when these are considered together, but little doubt can remain that the initial exanthem of variola is nothing more than an exanthem-form of the pock,—a symptom displayed by the variola fungus in its development in the skin. For this reason it is a highly erysipeloid process of a variolous character, most likely alone dependent upon and occasionally favored by some earlier variolus or vaccinal affection which had failed to give entire immunity for some reason.

The clinical investigation of variola and vaccinia shows that in the course of both infectious diseases, which are each dependent upon identical processes, erysipeloid changes may occur as well in the neighborhood of the point of inoculation as in the general surface,—sometimes regularly, sometimes only under certain local circumstances as specific variolus exanthemata. Variolous poison here shows itself as one of those bacterial infectious poisons which are capable of inducing erysipeloid process. Such processes occur directly by means of the so-called "erysipelatous contagion," but clinically identical processes may also be called out by other bacteria. Koch and Loeffer have shown that a peculiar bacterium, of extraordinary minuteness, which is fatal to mice by superinducing septicemia, causes, when inoculated in the ear of rabbits, a progressive erysipeloid inflammation. To this class belongs the bacillus of hog-erysipelas which causes erysipelas in rabbits as well as in certain kinds of swine.

If the views of Gatzen are to be regarded as worthy of credit, the specific contagium of vaccine and variola possesses the quality of producing a process analogous in all respects to erysipelas. While then, the areola is erysipelas-like in its appearance and course, why does it run such a regular ten-days' course? This question has not as yet been satisfactorily settled, although the fact is known that immunity dates from this period. The few cases in which the areola extends after the tenth day, with continued fever, etc., are due, one author thinks, to secondary heterogeneous infection. The prophylaxis of accidental vaccinal erysipelas belongs to the general domain of antisepsis and need not be further examined in this connection.

THE DISTANT EFFECTS OF ACCIDENTS.

BY J. LEE FOWLER, M.D.

THE development of the various agencies of civilization has made life more hazardous for the average person; the introduction of steam, the elevator, the use of illuminating gas, the trolley car, etc., have all increased the risks of living, and yet for the general good they accomplish, we hear no note demanding their abolition. Among the curious conditions, the resultant of civilized life, is the so-called "railway spine," traumatic spinal neurasthenia, spinal concussion, secondary spinal concussion, chronic spinal shock and the various other terms used by neurologists defining this condition.

The term "railway spine" is a misnomer, for the condition described under this class may be produced by falls down hatchways or stairways, by the overturning of wagons or the use of any force or violence applied to the back. We cannot use the term "concussion," however, for that is the word applied to a different condition. Wood recommends the clause, "traumatic spinal neurasthenia," on the ground that it is the result of traumatism, it is largely spinal, and that neurasthenia is the basic condition.

In taking up the discussion of this state, we must at once dismiss from our investigations all pains that cannot be confirmed by any physical evidence; in fact all data resting simply on the dictum of the patient. This is especially important, for many of these cases are medico-legal in character and must be fought out in the court room where as large interests are at stake men are often looked upon with suspicion. Not only in this arena are the subjective symptoms looked on with suspicion but also the objective, being regarded as the outcomings of hysteria.

We must get to work in this condition in a strictly scientific manner and elicit all signs that can be brought out by palpation, pressure motion either active or passive and by percussion. It is often impossible to differentiate clearly between the symptoms elicited by pressure and palpation. The first symptom that presents itself is an abnormal or hypersensitiveness of the skin which unfortunately occupies the borderland between subjective and objective symptoms. Its value is often impossible to determine exactly.

When the patient is examined by the use of pressure it is possible to see that he reacts in an unmistakable manner; no actor could so clearly and decisively express pain as does such a patient. We have first the group of symptoms including the well known tender spots of so-called spinal anemia or spinal irritation which are now generally accepted by neurologists as being connected to functional conditions simply. Comparatively light pressure is sufficient to bring them out; this is to be applied over the dorsal and cervical spine. In the large majority of cases this area of tenderness is small and rather sharply defined. Neurologists are in doubt as to the causation of these spots of tenderness; some

regard them as expressive of some change in function or nutrition, while other authorities regard them as the expression of some unknown and unexplained manifestation of hysteria, that convenient pigeon hole of the profession where all things misunderstood and unexplained are nicely shelved.

The fact that these spots are removed by the injection of cocaine while spots above and below are unaffected, the injection and its rationale being unexplained to the patient, leads many writers to regard them as *bona fide*. Next come the symptoms elicited by deep pressure; in many cases no pain is experienced unless this form of pressure is used. Of course common sense must be employed and care taken not to cause pain in the superficial structures by the mere act of pressure. Pointed instruments and the knuckles should be barred in this contest and only the palmar surface of the thumb be employed. Naturally the pain elicited by deep pressure is different in character from that of superficial; this is only common sense. It does not show the acute sensitiveness of the superficial painful spot; the patient reacts more slowly and it shows no resemblance to hyperthesia. Again it is more diffuse in character and instead of being found over the spine is apt to be seen on both sides of it. Another important fact is that it frequently bears a distinct relation to the history of the accident. Such a case is the following: a brakeman is caught between the bumpers while coupling cars; as a result while no bones are broken his back and side are badly squeezed. Subsequently, some two years afterwards there were found no painful spots or hyperthesia but he showed on deep pressure marked pain in the lower lumbar and upper sacral region, especially toward the left and deep tenderness over and above the ilium on the injured side. Taking up the question of percussion and the production of pain we may set down as an arbitrary dictum that pain produced by this method is of no significance unless both superficial and deep pain upon pressure are considered at the same time. The use of the ordinary rubber hammer, such as is used in examining the knee jerk is the proper instrument; having placed the patient prone extended and relaxed make a number of rapid but not hard blows over the spine with the edge of the hammer, the intention being to elicit the sense of pain not by the force of the blows but by the jarring produced. This method will often elicit pain in the bony structures when all other means fail and probably it will elicit pain having its origin in the spinal canal itself.

Dercum relates two examples of this point as follows: One was a man in my care who fell from a wall some ten feet high, striking upon the lower portion of the back, and who subsequently developed a concussion myelitis. In him pain, absent in this region to other tests, was elicited in the lower dorsal and upper lumbar region by the hammer used in the manner described. The other case was the patient exhibited at a meeting of the American Neurological Association, who had been cured of paraplegia by the resection of a number of spines and laminæ. In this man pain on percussion was one of the most definite and valuable symptoms present, and in the course of the operation marked inflammation of the dura with adhesions to the subjacent pia were revealed, while the fragments of bone removed appeared healthy. These cases are very suggestive, and it certainly is not improbable that this method of percussion—that is the jarring produced by slight though very rapid blows, may be of decided value in cases otherwise obscure.

Taking up the question of pain elicited by voluntary motion we are at once confronted with the problem of the possiblity of "malingerism." The majority of these cases are looking for damages and are not anxious to have their condition put in the most favorable light. Yet nature has set up various standards which if we consider will make our task lighter. It is an axiom that if there is pain on movement, there is an instinctive tendency to prevent all movement on the part of nature. The patient will hold his back stiffly and adopt curious and typical attitudes. Again, should the patient complain in certain movements, skilfully executed passive motions involving these parts will often guide the examiner aright.

There is one symptom which if present is most valuable, for it is impossible of simulation. This is the painful spasm of the muscles of the affected area either continual in character or coming on when either active or passive motion is attempted. Still more reliable is that condition in which the muscles are in a state of spasm when touched and show increased reflex irritability. To apply these tests requires a little knack which I will endeavor to explain at this point. These movements are flexion laterally and forward, torsion and transmitted shock. Standing our patient in front of us, we direct him to bend over and we should direct our attention closely to the manner in which the act is done, the amount of actual motion in the back itself, the stage at which the patient complains of pain, the area to which the pain is referred and especially the occurrence of muscular spasm. If it happens that rigidity is a marked feature, the patient will throw his back forward as one piece, as if it were lashed to a board. Should you urge the patient to make a more decided movement, he will generally bend his knees, stoop or adopt any other measure to save his back from motion and himself from pain. If the case is not too pronounced, or the patient has a strong will, he may be able to bend the back to a certain degree but he will soon cease from this endeavor protesting against its continuance. At such times, frequently spasm makes its appearance and is usually more marked in the lower dorsal and lumbar region. Of course this is the report of a well marked case, there are many where the forward flexion may be almost completed before pain is complained of, or the motion may be confined to one part of the back.

Should we be suspicious of our patient, that he is not doing all that he could in this direction we can try forced flexion, grasping him and bending him forcibly, but this is a matter which rests with the individual judgment of the examiner for he may do damage to his case. Next try lateral flexion, observing the same principles. It sometimes happens that lateral flexion may bring out some peculiarity in the case such as the existence of injury on one side.

In case these measures fail to satisfy the operator, he can then try torsion which consists in having an assistant kneel before the patient and firmly grasp the hips while the doctor seizes the shoulders of the patient and gently but firmly rotates the trunk. If there exists deep seated tenderness, this method should bring it out; and it is of especial value in those cases where there has been less injury to the muscles of the back than to the fibrous tissues and smaller joints of the spine itself. In such cases the test is a fine one. Let us remember then that flexion affects the muscles the most while the torsion affects the spine itself.

The last test that I will mention is that of transmitted shock which can be practised in various ways; for ex-

ample standing the patient as erect as possible, the operator places both hands with fingers interlocked on the head and by a sudden movement downwards sends an impulse through the spine, gauging the force by nature and history of the case, for the spine may be so sore that reaction to a slight impulse even may be severe. It is well to begin with a mild impulse and increase it gradually. Now coming to the elimination of the cervical portion of the spine from the problem, seat the patient and transmit the impulse by means of the shoulders. But it is hard to get a direct sensation in this way and hence this method is rather unsatisfactory. The last means is to have the patient raise himself upon his toes and drop quickly on his heels; this is not of much value.

There must be a certain relationship in all the symptoms elicited; for example, the area of pain on deep pressure should correspond to the area of pain in motion, etc.

The treatment of these cases is of interest. Immediately after the injury, absolute rest, leeches, hot or cold fomentations and the usual methods of the surgeon for combatting inflammation are in order. As soon as the acute symptoms have subsided the question arises as to whether the nerve is simply functionally depressed or whether it has been left in a state of inflammation, possibly with exudations. In this connection the opinion of Wood who has happened to have many cases of this sort is excellent: "If a nerve-trunk be found tender, even if there be no characteristic shooting nerve-pains, blisterings are in order. If any hardening can be found in the immediate neighborhood of the nerve, the question of an operation comes to the fore. Possibly some of you may remember a case I had here last winter, in which a blow over the musculo-spiral nerve had been followed by loss of power almost complete, and in which a defined hardness could be felt at the seat of the injury. After the failure of all other treatment, I cut down upon the nerve, which was found imbedded in a mass of inflammatory exudation; from this the nerve was carefully freed. The wound healed rapidly under the antiseptic method, and the measures which before had failed to give relief soon brought about restoration of function.

"After the acute stage of an injury has entirely passed and all inflammations have been subdued, the means at our command for treatment are to be found in the use of massage, electricity, and hypodermic injections of strychnine.

"Of course I do not propose to discuss the various manipulations of massage, but I do desire to direct your attention to two points concerning these applications. All surgeons recognize the fact that false ankyloses frequently occur in joints, and that for restoration of movement it is necessary that the bands of fibrous tissue be broken up. It is not, perhaps, as universally recognized that exudation may bind, in a sort of false ankylosis, two muscles together, and that a single muscle may be bound in its sheath in such exudation, or that even the various fibers of muscle may be so agglutinated that the function may be greatly interfered with. In many of these cases, one of the great objects of massage is the freeing of the muscles and the bringing about of absorption of the exudate, so that passive movements should form an important part of the manipulation: not rarely these passive movements should be gradually increased in violence until muscles are loosened one from the other and the natural play of parts restored. The second point in massage is that the manipulations act not only by stimulating the afflux of blood to the part, but also by aiding the return current through venules and lymphatics; hence the important rule that the general trend of the movements chould always be in the direction of the return circulation."

It is well known in medicine that a person who has not been openly neurotic or hysterical may acquire such hysteria as the result of a shock, either from an accident or other sudden occurrence. I well remember a man who met with a distressing accident while endeavoring to capture a burglar whom he found by his bedside. The man became so hysterical afterwards that he was a bore to all his friends; he dwelt and redwelt on this occurrence until he became almost a monomaniac on the subject. How far the hysteria is due to the accident and how far to the emotional excitement of the accident is hard to determine; shock of the nervous system independent of the emotions is capable of developing that peculiar nervous mobility called hysteria.

Let me here present a case which is of general interest on this subject. This patient was a man who was struck on his back by a heavy board that had dropped from a distance. He fell unconscious and when he came to, found himself on a board from which he was unable to get up and walk away for a long time. Since the accident he has been unable to work. There were no prospects here of what some authorities half humorously call "litigation symptoms" for the man was responsible for his own mishap.

The patient has been entirely disabled from work; exceedingly nervous, depressed in spirits, with headaches, ringing in the ears and insomnia. His gait is halting and irregular and he stoops. He has had two phases of cerebral attacks, one of brief moments of unconsciousness, the other of longer duration in which he is actively delerious. He does not remember either attack after it is over. It is necessary to strip such a patient to the skin to examine him properly; do not make the mistake of neglecting this for any reason. This man showed a distinct lateral curvature; tremors were present due to persistent but irregular movements of the muscles of the back. The erector spinæ muscles were especially prominent and when he endeavored to move, these muscles started out with a spasm from the back. He shrinks perceptibly when his back is touched and the tenderness extends over the entire back; with this superficial tenderness there is deep seated soreness so that pressure on his head gives intense pain. He has no paralysis but loss of power.

His knee jerks are exaggerated and there is slight ankle clonus. He has not lost sexual power but it shows nervous irritability and weakness in the occasional occurrence of the emissions and these are premature. He has not lost control over the bladder but must get up during the night several times to urinate. Always examine the urine carefully for diabetes due to traumatism. Certainly such a case as this is not to be explained away by a bald explanation that it is one of hysteria and yet I have seen just such cases as these pronounced fraudulent by railway surgeons.

We find in the text-books learned dissertations on the use of electricity; specialists talk wisely of milliamperes and varying currents but in paralysis, electricity is of little value while milliamperes are of no service and the discussion of the current is time wasted. There is a simple empirical rule which is a safe guide in these cases; it is to use the current which produces the greatest muscular contraction with the least pain.

In conclusion I will summarize in the words of a well known authority on this subject as follows:

"The various symptoms presented can be convenient-

ly grouped as follows: First, those due to the physical condition of the back; second, the symptoms of functional derangement and asthenia; third, psychic and hysterical symptoms. To the first group belong—first, pain on deep pressure; second, pain on motion and transmitted shock; third, muscular spasm and rigidity; fourth, muscular weakness.

"Now the pain elicited by pressure, motion, or shock is evidently the result of a deep-seated injury either to the ligaments of the spinal column or to the muscles, probably to both. Practically it is impossible to differentiate between the two, nor is it important. We should remember, in thinking of the muscles, that they are normally in a state of tension, especially when the trunk is erect. Indeed, the physical condition presented is that of a bow with many strings. It is not difficult to understand how, under these circumstances, jars and blows should cause serious though perhaps minute strains of the muscles, especially in their tendinous insertions, and these, as we know, are excessively numerous. Further, it is not impossible that at times even the intervertebral cartilages and the joints formed by the articular processes may be the seat of sprain. I should certainly regard this probable in cases that reacted inordinately to transmitted shock and torsion.

"To muscular spasm and rigidity are to be assigned the same value which is assigned to the muscular spasm observed in a sprained, a dislocated, or a broken limb. The muscular weakness, resulting occasionally in lordosis, is to be ascribed to the general weakness resulting from the shock and also the direct effect of the trauma upon the muscles themselves.

"To the group of symptoms of functional derangements and asthenia belong of course the various symptoms of general weakness, both mental and physical, tremor, sweating, inability to properly expel or to retain the urine, etc., but it is not our business to deal with them here.

"To the group of psychic and hysterical symptoms we must of course relegate the hypochondria, the night terrors and the convulsions. These likewise it is not our business to discuss."

TREATMENT OF TYPHOID FEVER WITH CASTOR OIL.*

BY C. C. BASS, M.D., COLUMBIA, MISS.

IT is proposed in this paper to call the attention of the Association to a treatment for typhoid fever which is at once old and new. The treatment is old in that castor oil has been administered for many years to relieve certain conditions as they arise in the course of the disease, it being often used to relieve tympanitis, constipation and accumulation of undigested and hurtful food. Perhaps there are few physicians present who have not used castor oil at some time in the treatment of typhoid fever. It is the equivalent of the established eliminative treatment, but it is a better choice of drugs. It is new in that castor oil has never been administered as an exclusive, or nearly exclusive treatment. The quite considerable inquiry which I have made has failed to find the treatment suggested in this light, except in an article of my own published in the *Mississippi Medical Record*, April, 1902.

This paper will present briefly: 1, the theory; 2, the method, and 3, the result of the treatment.

1. The Theory.—Typhoid fever is an acute, contagious, self-limited disease characterized by inflammation, necrosis and ulceration of the Peyer's patches and the solitary glands of the small and large intestines. The cases are generally divided into three varieties; the abortive, the mild, and the severe forms. In the abortive form there is no necrosis and no ulceration of Peyer's patches. In this form the temperature reaches normal in the second week. This form seldom occurs in the section of country where I practice. In the mild type, the temperature reaches normal in the third week, with slight elevations generally extending into the fourth week. The bowel lesions may be extensive, but healing is prompt. In the severe form the temperature ranges high. It may reach normal in the fourth week, but may not do so for a number of weeks longer. In the second or third week, the patient passes into a low adynamic condition characterized by dry tongue, sordes, delirium and muscular disturbances. It is also claimed that severe cases are those in which the absorption of toxins from the alimentary canal is excessive, and the eliminations therefrom is defective. In the abortive cases there is seldom tympanitis, in the mild ones very little, in the severe ones this is a prominent symptom. The more tympanitis, the severer the case, and vice versa. Meteorism arises from two principal causes: 1, increased fermentation which takes place in the intestinal contents, and 2, paralysis of the muscular coat resulting from toxemia. If the gases in the tympanitis are not themselves toxic, they, at least, increase the tension in the bowel and increase the absorption of the toxins and the germs that do exist in the canal. It is a firm conviction with me that the serious nervous and muscular symptoms are, to a very great extent, if not altogether, due to the absorption from the intestinal canal of toxins. The results of the castor oil treatment prove this clearly enough and, it seems to me, does it conclusively. Take any case of uncomplicated typhoid fever where the temperature ranges above 103° F., and give a dose of castor oil every twelve hours, giving no other medicine at all, and the fever will invariably be reduced in three days, and will generally be below 102° F., and always below 103° F. Any case with wild delirium will subside in the same length of time. The effects of the oil is confined to the bowel. It accomplishes what it does effect by eliminating from the bowel germs and toxins which would otherwise be absorbed. If sweeping germs and toxins out of the bowels, thereby preventing their absorption, diminishes these symptoms then, surely, the absorption of these poisons must be the thing that causes them or aggravates them. The administration of antiseptics, such as have no effect on the nervous system, will generally accomplish the same thing. This is again evidence that the cause of the severe symptoms, or the cause of their severity, is the taking up of something from the alimentary canal. Therefore, the theory is deduced, that, the more of these gases, toxins and germs are eliminated from the bowel, the milder will be the case. The thing then, if this much of the theory is correct is a drug which will eliminate these poisons from the bowel and, at the same time, has no effect upon the nervous system and will not spend the patient's strength. Castor oil is the medicine wanted. It goes through the bowel practically as a bolus, or en masse, and cleanses them more thoroughly than any other purgative, and it does not draw upon the system or any organ for its purgative property, but acts of itself, and is not absorbed to overload the already overburdened blood with abnormal substances. I feel myself justified amply in saying after repeated and careful tests, that castor oil does not weaken or injure the patient, and that no other purgative known to me or used by me acts in the same way. In typhoid fever, digestion is very imperfect, and fermentation is excessive.

* Read before the Mississippi Valley Medical Association, October 17, 1902.

We have in the alimentary canal, therefore, at all times, more or less fermenting and undigested food, which, of course, makes a bad application to the inflamed, necrosed, or ulcerated mucous membrane. Move this off often enough to prevent any accumulation of it, and protect the membrane with oil, and the inflamed spots will not be likely to pass to necrosis, and ulcers will heal more rapidly. The quantity of this fermenting and undigested food will be kept less by moving it off often, and the amount absorbed will thereby be lessened, and the case thus held to as mild a course as possible. If the ulcers are slow to heal, and the case runs a long course, the patient is not overburdened with toxins to exhaust him before they do heal and the fever subsides. Abortive cases will be kept abortive, mild cases made mild, and severe cases will be converted into mild ones.

2. The Method.—Taking tympanitis as my guide, my object was to keep the bowels as free as may be of germs, toxins and fermentation. When I first began the use of the treatment, I gave one dose of castor oil every twenty-four hours. I found that, after giving a dose, tympanitis was partially or wholly relieved, but that it usually began to return before time for the next dose. I also found that the typical typhoid odor of the stool, while perhaps it was partially relieved, was never altogether. I then began to give a dose every twelve hours, and found that, in from one to three days these conditions were entirely removed, the stool was rid of the typhoid odor, and was as odorless as that of the healthy man. The presence or absence of the typical odor of the stool became at once another valuable guide in the treatment. These two results: 1, the bowels free from tympanitis, and 2, a stool free from the odor, indicating a satisfactory condition of the canal, can be had by administering a dose of castor oil every twelve hours, but it cannot always be had by less than that.

A dose of castor oil is an indefinite quantity in the treatment of typhoid fever. It varies in different cases, and in different stages and conditions in the same case. It may vary from one to eight drams. Enough to act in three to five hours should be given, but not so much as to act more than twice. If the patient is seen in the first week, when constipation usually exists, the dose will be from two to four drams, but if in the second or third week, when diarrhea is the rule, one to two drams will be the proper dose. After one or two doses have been given, it can be easily regulated. During the second and into the third week, the dose is about the same, but increases considerably during the last week in the bed. In abortive cases the dose is usually larger all through the course of the disease. The taste is very well disguised by giving it in a warm cup with a little boiled sweet milk.

3. Results.—The result of the treatment is about as follows: The temperature ranges lower; tympanitis and delirium do not occur, and if they are present, they soon subside; diarrhea and dysentery are prevented, or checked if they already exist; the disease runs a milder course, and the patient does not lose flesh and strength so fast as they generally do under any other treatment. The last named result is its greatest advantage over any antiseptic treatment. The explanation is, that any antiseptic that is effective enough to prevent, or materially retard fermentation and germ life, will also prevent or generally retard digestion. Castor oil does not do this.

Up to the present time, I have treated thirty-two cases of typhoid fever with castor oil, and, except in a very few of these cases, in which I gave some other medicine to meet some special symptom, I gave nothing else. In order to be brief, I will report them collectively. Thirteen cases were treated with one dose every twenty-four hours, and nineteen cases with one dose every twelve hours.

Three of the thirteen cases which were treated with a dose every twenty-four hours, had a temperature above 103° F., delirium and tympanites when the treatment was begun. These symptoms subsided in from three to five days. The temperature came down below 102-3° F. in from two to five days; after that they ran the same mild course that the other ten did. With the exception of one case for one day, and of the three cases in the beginning of the treatment, as just mentioned, the entire thirteen cases had a temperature during their entire course ranging below 102½° F. Except as mentioned, of the three cases, delirium nor tympanitis never occurred. Their temperatures reached normal in from fifteen to twenty-six days, and there did not occur a single complication. Of these thirteen cases, four had diarrhea, and one had dysentery when the treatment was begun. In each instance, these symptoms were entirely absent within four days. Afterwards, they continued as the other cases, having one or two actions after each dose of oil.

Of the nineteen cases treated with a dose every twelve hours, there were six cases with delirium, tympanites and a temperature above 103° F. when the treatment was begun. In all of them, these symptoms subsided within three days, the temperature coming below 102° F. There were three other cases in which tympanites was prominent, in which it also subsided. After the third day of the treatment, excepting only in four instances, the temperature in the nineteen cases ranged below 102° F. throughout the entire course. It is to be understood that of the fourteen instances referred to, maybe one, maybe two, maybe three would occur in a single case. The temperature reached normal in from twelve to twenty-one days from the beginning of the attack. In calculating the duration of the disease, I have not taken the date of taking the bed as the first day of the illness, as is sometimes done, but, in each case, inquired carefully as to the first day of the malaise, headache, etc., even when there was no knowledge of fever, and calculated from that date. One of the nineteen cases should have special mention. After a mild course, the temperature reached normal on the nineteenth day of the illness, and on the twentieth day began to rise again, and ran another course of twenty-three days, in which the temperature went above 102° F. several different times. Free hemorrhages occurred on the thirty-first day of the illness, and tympanites followed administration of opium and withdrawal of the oil. Tympanites promptly subsided when the oil treatment was resumed. In this case the treatment seemed to fail, the duration of the disease and the hemorrhages considered. Six of these cases had diarrhea when the treatment was begun, which invariably subsided in from one to three days. To sum up the nineteen cases, and leaving out the one specially mentioned, after the third day the temperature ranged below 102° F., tympanitis and delirium were absent and the temperature reached normal in from twelve to twenty-one days from the beginning of the attack, making them all abortive, or mild cases.

It is true this is too small a number to base positive conclusions on, but large enough to commend the treatment to us as worthy of further investigation.

THE CLINIQUE.

SERVICE OF GEORGE L. PEABODY, M.D., AT THE NEW YORK HOSPITAL.

I. A Case of Acute Nephritis.—This man is 19 years old; a tin-polisher by occupation. He states that in his work he uses a reddish paste which contains acids and fats. His family history is negative. He gives no venereal nor tubercular history and with the exception of measles in infancy he always enjoyed good health until three months ago, when he had an atttack of pleurisy on the left side which was apparently mild and from which he soon recovered. He drinks tea and coffee and denies the use of alcohol.

Four days ago he noticed that his feet began to swell, and the swelling soon extended to his body and face. At the same time he had a pain in the back and some dyspnea, even while quiet. He also had a headache, and he noticed that he passed less urine than before. His bowels were regular. When he was admitted to the hospital on December 6th, at 11.40 a.m., his temperature was 99.4; respirations, 24; pulse, 88. There was well-marked edema of the feet, body and face; this has largely disappeared, but there is still some puffiness of the face and edema of the eyelids. The tongue was pale, moist, flabby and somewhat coated. There is a faint systolic murmur at the apex, transmitted towards the axilla. The pulse is regular, of fair volume and tension. Faint sub-crepitant râles are heard over the left chest, posteriorly, the site of his old pleurisy. The liver and spleen are apparently normal.

At the time of his admission he was only able to pass a small quantity of urine, which was acid, dark yellow in color, and contained a large amount of albumin, about 10 grams to the litre; the microscope showed numerous fine and coarse granular casts; there was no sugar. During the first twenty-four hours he passed 48 ounces of urine. At a second examination of the urine its specific gravity was found to be 1020, alkaline, yellow in color; it contained no sugar, but about the same amount of albumin as before; the microscope showed many fine and coarse granular casts, pus and red blood cells; also abundant triple phosphates.

The diagnosis of this case is clear, but the etiology of his attack of acute nephritis is not so clear. He never had any of the infectious diseases, excepting measles, as a child, and his attack of pleurisy four months ago probably has no relation to his present illness. He states, however, that three weeks before the onset of the swelling of the feet he was drenched in a rain-storm and went to the theatre in his wet clothing. While it is not at all common to have an attack of acute nephritis come on three weeks after such an exposure, still, like typhoid fever, its onset is sometimes very insidious. Usually, however, it begins rather abruptly with chilly sensations, fever and pain. It is therefore uncertain how much this patient's wetting had to do with his present illness.

As regards the prognosis, it is indefinite. Sometimes the condition lasts for months and ultimately terminates in recovery; at other times it terminates in chronic nephritis.

The treatment is pretty definite. We want to flush out his kidneys in order to get rid of the morbid products which collect there. This flushing is done by giving him an abundant quantity of water to drink. There is no better diuretic; in fact, the use of medicinal diuretics is of doubtful propriety, unless other symptoms are present indicating their employment. For example, if the heart is weak, digitalis might be given. The next thing to do is to relieve the kidneys from excessive work as far as possible. The mere filtration of water through the kidneys can hardly be looked upon as excessive work. The bowels should be moved once or twice daily, but active purgation is not indicated. The function of the skin should be stimulated. Profuse perspiration can be induced by the administration of pilocarpin, but I only use this in cases where the pulse is hard and the indications are to diminish arterial tension; then a dose of one-eighth or one-sixth of a grain can be given subcutaneously. Preferably, the action of the skin should be stimulated by mechanical means: a hot bath, or a hot air-bath or a hot pack can be given once daily. If the pain in the back is severe, it can be relieved by the application of dry cups, which also perhaps may have some effect upon the congestion of the kidneys. The treatment of acute nephritis, more than anything else, is rest in bed under warm blankets, so that the action of the skin may be continuous, and the abundant use of milk, which not only nourishes the patient, but also contains sufficient water for flushing the kidneys. If the patient tires of a milk diet, there is no objection to giving him broths, or beef juice, or green vegetables or a little bread. It is rather important not to return to a meat diet until the symptoms have largely subsided, and then it should be given sparingly and its effects carefully watched. The treatment really resolves itself into giving as much rest as possible to the kidneys by stimulating the action of the skin, regulating the bowels and keeping the patient in bed on a milk diet.

The accumulation of fluid in acute nephritis is not always confined to the subcutaneous tissue; it may fill up the pleural cavities or the abdominal cavity and give rise to conditions which must be met as they occur.

With the object of inducing this patient to perspire freely, we intend to give him a hot pack, and if this is not sufficient, it should be preceded by a hot bath. Before doing this, I will have him cupped over the lumbar regions. The cupping-glasses we use here are the ordinary small medicine glasses. The air in the glass is exhausted by means of a wad of absorbent cotton, which has been steeped in alcohol and set on fire. The cotton, held with a pair of forceps, is inserted into the glass for a moment, and then the latter is immediately firmly applied to the skin, which is sucked upwards into the vacuum. This suction is sometimes so strong that an actual hemorrhage is produced underneath the skin; these so-called "black and blue spots" are, of course, undesirable, especially in a case like this, where we desire to repeat the cupping every day. The cups are left on anywhere from five to fifteen minutes, and are easily rmoved by pressing down the skin at the edge of the glass. After their removal, any simple dusting powder can be applied to prevent inflammation of the skin.

The hot pack is applied as follows: The patient is first enveloped in a blanket which has been wrung out in hot water; this is covered with dry blankets, and outside of these a rubber sheet to prevent evaporation. These are left on for about an hour. Sweating may be further promoted by the administration of hot or cold drinks. These hot packs should not be given indiscriminately, as they are sometimes very distressing and may give rise to a certain amount of dyspnea and feebleness of the heart's action. The patient should therefore be carefully watched, at least in his first pack, to note the effect. Usually the packs are very beneficial in these cases.

II. A Case of Typhoid Fever.—This man is 30 years old; a porter by occupation. His family history is negative. He gives no tubercular nor syphilitic history, and

with the exception of an attack of diphtheria in childhood he has always enjoyed good health up to the onset of his present illness. He drinks tea and coffee, and is a moderate user of alcohol. Ten days ago he began to complain of chilly sensations, with fever and sweating. These symptoms continued, and at irregular intervals have occurred up to the present time. He has had one slight nose bleed, and there has been more or less nausea and vomiting, with loss of appetite. His bowels were at first constipated, but are loose at present. There are no urinary symptoms. His chief complaint is a feeling of weakness.

When he was admitted to the hospital, at 3 p.m. on December 5th, his temperature was 103; pulse, 88; respirations, 28. The heart sounds were feeble; the pulse was regular, of good size and low tension. There was sibilant and sonorous breathing over both sides of the chest. The liver and heart were normal. The spleen is much enlarged. The abdomen is somewhat distended, and is the site of a few rose-colored spots. He passed 36 ounces of urine during the first twenty-four hours; 40 ounces during the second; its specific gravity was 1025; acid; it contained a trace of albumin; no sugar; some uric acid and triple phosphates. The patient was at once put on a milk diet, receiving 56 ounces of milk on the first day and the same quantity on the second day.

In this case I first wish to demonstrate to you the rose-colored spots. They are a little more elevated than usual, and some of them show a minute vesicle, which is rather rare. The splenic area of dulness is at least eight inches in length. Splenic percussion is usually extremely unsatisfactory, but generally speaking, if it measures more than three inches by two inches, it is excessive.

In addition to a milk diet, this patient is given cold baths as often as they are indicated. The first was given three hours after his admission, and his temperature fell from 104 to 102. The next morning, at five o'clock, the cold bath reduced his temperature in half an hour from 104 to 101. At 5 p.m., it had again risen to 103.4, and was reduced two degrees by a bath. Three hours later it was again reduced by the bath from 103.6 to 101. Yesterday he received two baths, one at five in the morning, the other at eight o'clock in the evening. Since then his temperature has again risen to 103, and we are about to give him another bath in your presence and you will note the result.

The temperature of the water in the tub is 65; the patient is lifted into the tub by two nurses, and his entire body immersed, while the head is allowed to rest upon a towel stretched across the upper end of the tub. The ears are stuffed with cotton to prevent the entrance of water into them. The bath is kept up for ten minutes, and during this time the patient's body and extremities are vigorously rubbed, but not too vigorously, lest the epidermis should be rubbed off. The friction should be fairly active, in order to stimulate the circulation of the skin. Nothing is more marked in the way of therapeutics than the good effect of such a bath, properly administered, and the bad effect of such a bath, improperly administered. If you simply take a fever patient and soak him in cold water, the result is extremely depressing; it causes a contraction of the blood-vessels in the skin, which becomes cold, but there is no tendency to cause a reduction in the general temperature and the patient is taken out of the bath in a feeble condition. If, on the other hand, the immersion is accompanied by vigorous friction, the circulation in the skin is quickened, the blood is transmitted much more actively from the heated interior to the cool surface, sent back again into the interior and its place taken by another supply of hot blood from the interior.

When the ten minutes have elapsed the patient is removed from the bath and rapidly dried by patting him all over with a dry sheet. He is then put to bed and covered with one dry sheet; nothing else. There is no danger of these patients catching cold. He then receives a glass of hot milk, which acts as a cardiac stimulant and tends to diffuse a sense of warmth. If necessary, hot bottles can be placed to the feet and a dose of tincture of capsicum with a little whiskey may be given. His pulse previous to the bath was 100, and still remains the same. Under the influence of these baths, the temperature falls in the course of half an hour. They also promote sleep and improve the general well-being of the patient. In a mild case like this the baths are not repeated very frequently, and are omitted at night.

The diagnosis in this case, although the sypmtoms are very clear, has, of course, been confirmed by a blood examination.

Electrical Anesthesia in Dental Surgery.—During the last few months several announcements have been made of the use of electricity as an aid to dental surgery in the way of producing anesthesia, deadening live nerves, etc. In one of the methods, the negative side of the circuit is connected to a head piece which has terminals that are placed in contact with each side of the face and held in position by means of a hard-rubber band. The positive side of the circuit is attached to an ordinary dental engine and the current passes through the burr of the drill to the patient.

By means of the apparatus, the inventor says that he short-circuits the pain, or, in other words, succeeds in the removal of exposed nerves by preventing the transmission of the sensation impulses to the brain by short circuit. This is done by low voltage and high resistance. The storage battery used is made especially for the purpose and consists of 12 cells. All the cells are used in starting, but while operating only one cell producing one volt of electromotive force is used. The current from this cell is cut down to less than one three-hundred-thousandth of its strength by means of a resistance of 300,000 to 400,000 ohms. Sufficient current is produced, however, to enable one to operate on the most sensitive teeth without pain. The inventor himself was the first one to submit to an operation by means of which a live nerve was painlessly removed. Since then, many similar operations have been performed, he says, by various dentists with great success. No shock is felt, and it is said that the effect is that of a tonic, the patient getting out of the chair recuperated and refreshed.

—There is a deeply-rooted prejudice in the minds of many people against the introduction of plants into bedrooms, and this, according to *Health*, is well-founded, seeing that in the dark plants exhale carbonic acid gas, and consequently add an impurity to the air. Under the influence of sunlight, however, they take up carbonic acid gas, of which they retain the carbon and set free the oxygen, and so become great air purifiers. When we take this into consideration, along with the fact that the quantity of carbonic acid gas given off at night is so extremely small that Miss Florence Nightingale, when pleading for plants in the sick room, said it "would not poison a fly," we must come to the conclusion that plants in a bedroom are certainly desirable whenever there is convenient space for them.

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Culture is half way to heaven.—George Meredith.

STATE INSANE HOSPITALS.

THE records of crime can furnish no parallel to the fiendish promptings of violent political partisans in their statement just before election of the abuses in the management of state charitable institutions, especially in those where the charges made might take a long time to refute. Just before the last election the Democratic partisans published to influence election the action of the recent law for the government of the insane and the abuses to which it was subjected. Every one of these statements was maliciously false, the real facts showing a better management under the new law, than was ever obtained before. The Governor has had no knowledge of the physicians or stewards in charge of the Institutions and did not even know that the commission contemplated a change in the dietary in force before December, 1901. On the contrary he has repeatedly stated to the commission that he desired to have the dependent insane well fed, well clothed and deprived of nothing that would promote their comfort or enhance their chances of recovery. The changes in the dietary since 1898 were entrusted to Prof. Atwater, the government food expert, the greatest authority on food and its functions in the United States. In 1901 Prof. Atwater furnished the commission with an exhaustive report of his findings recommending that marked reduction might safely be made in the existing ration allowance. The charge made of the existence of scurvy owing to lack of proper food is absolutely false. At this time and for several months past the insane of this state are receiving better quality, quantity and variety of food than any similar class of persons anywhere in the United States. The food is better served and more appetizing. The statement that the clothing allowance has been decreased is also false. Greater care is taken of the clothing of the patients to-day than ever before. The system of rules and regulations which has been so strongly condemned, prescribed by the commission and approved by the Governor, were prepared by the medical superintendents themselves. There can be no excuse for this wholesale misrepresentation of facts. This tissue of lies sent broadcast over the country for purely partisan purposes; the agony which it has brought upon thousands of minds among the friends and relatives of the patients points to a mental degeneration only parallel to the fiends of hell. The commission on lunacy has published in a large volume a very valuable report, showing the working of all the state hospitals under its care. The most important factors in the management of the insane are: First, a carefully selected diet fitted to every emergency; and second, the rest treatment introduced by Superintendent, Dr. Selden H. Talcott in 1877. We append an abstract of the treatment introduced by Dr. Talcott and which has met with very marked success. The rest treatment consists in putting the patient in bed, and keeping him there until his exhausted energies have been restored or improved by the use of suitable food and nursing and medication. The administration at the outset of an easily digested, readily assimilated hot liquid diet, followed at a proper time by solid food, is the best and most successful course to pursue. Not only is food selected according to scientific principles but also it is prepared, cooked and served in a manner which developes the highest nutritive value and at the same time inspires most surely the appetites of mental invalids. Patients who are undergoing the rest treatment require the personal care of specially trained nurses. The skin, the bladder, the bowels and all the other organs of the body must receive proper attention while the patients are in bed. Oil rubs, massage and baths of various kinds must be given. These patients excite the sympathy of the nurses, and inspire a feeling of tenderness which does not obtain when such cases are up and dressed, and roaming about the wards and grounds. More than that, the actual conditions of insane patients are best disclosed when they are in bed and under the observations and inspections of attending physicians and trained nurses, and thus the personal care of the patients and the application of restorative means are more effectively made than under any other circumstances.

In no class of patients are the beneficial effects of a judicious use of bed treatment more noticeable in promoting comfort and longevity than in general paresis. The restless and disturbed paretic wears himself out less rapidly in bed and often loses his restlessness entirely while the quieter cases in the early stages maintain a fair degre of health longer with reasonable rest and when overexertion is carefully avoided. An examination of our record shows that since this plan has been adopted, the average duration of life in each case after admission has more than doubled. We believe that the rest treatment, and a most elaborate and generous diet,

and skilled nursing, and pleasant and inspiring surroundings, and modern scientific medication should be continued; and that the scope of such treatment should be enlarged until its benefits are extended to every patient who is afflicted with that direst of all diseases—mental disorder.

THE BERLIN TUBERCULOSIS CONGRESS.

THE Tuberculosis Congress which closed its deliberations in Berlin October 25th contributed but little, new or important, to the subject under discussion. Most of the time was taken up in discussing the theory advanced by Dr. Koch at the London Tuberculosis Congress that the disease was not transmittable from animals to man. Dr. Koch said that the experiments he was now making were not yet complete but as far as he had perfected them he had not found the slightest evidence that would tend to shake his conviction. He reiterated that animal and human tubercles were not identical and therefore that so far as the possibility of infection from milk, butter or meat was concerned the stringent measures of the sanitary police were superfluous. He conceded, however, that swine fed with milk of tuberculous cows die. He declared that only two cases of alleged general infection were known to him and these two were not proved. He did not affirm that the transmission of tuberculosis from animal to man was impossible but that cases of the kind were extremely rare. He was surprised at the outcry against the consumption of raw milk when the same people would eat butter without harm, whereas butter contained virulent tubercles. The report of the American physicians, Drs. Schweinitz, Dorset and Schroeder was received with marked attention. In this report it was stated in opposition to Koch's theory that several positive cases of transmission of tuberculosis to calves by subcutaneous inoculation with material obtained from a tuberculous human being proved positively the possibility of infecting cattle by germs of human origin, that the germs obtained from human tuberculosis, says the report, can produce tuberculosis in cattle is to our mind absolutely proved. Dr. Koch said that the American literature on the subject of bovine and human tuberculosis was one-sided and often couched in terms such as might be used by a lawyer who in defending a criminal would suppress all points telling against his client. Dr. Heron of London read a paper in which he said that since the announcement of Dr. Koch's theory in certain parts of Great Britain and Ireland there had been a relaxation in the enforcement of laws prohibiting the sale of tuberculous milk or meat, but that this relaxation has not been followed by an increase in the death rate from tuberculosis, that having steadily decreased.

The discovery of the tubercular bacillæ has given an impetus and directness to the study and investigation of the cause, progress and treatment of the disease which promises rich results in the future. We learn that the tuberculous bacillæ which may be communicated from one to another, only communicate the disease in certain cases where the strength and vital force are insufficient to resist their action. The soil into which they are introduced in the human system lacks the strength and vital force to resist any effect which they might otherwise produce. Hence where our attention is turned to the bacillæ itself in arresting and preventing its determination much more attention is given in sanitation, in proper food and hygiene to so fortify the system as to enable it to resist the power of infection. The first symptoms are now being met by a general strengthening of the human system, and in sanitariums properly located so far as atmospheric and general hygienic influences are concerned and where the diet is so arranged as to give the greatest strength to resist the attacks of the disease. Attention is being directed now to sanitariums under proper medical care and well regulated diet not only in our own vicinity but especially in Arizona, New Mexico, and other localities along the line of the great mountain ranges. The experiment recently put into operation of a tubercular pavilion in connection with the Metropolitan Hospital of this city by the Department of Charities has proved eminently successful. The pavilion is under the care of specialists who have devoted careful study and thought to the needs of that class of patients. The building is so arranged as to furnish the largest amount of sunshine and fresh air possible. The food is abundant and specially adapted to the condition of the patients. The increase of these institutions and the attention now being given to physical training in our schools and hygiene in our homes will undoubtedly contribute largely to the decrease of a disease which in its prevention and treatment requires so many factors to insure success.

THE FUTURE OF THE FAMILY DOCTOR.

DR. BEVERLY ROBINSON, in a letter to the *Boston Medical and Surgical Journal*, gives somewhat humorous expression to "certain misgivings regarding practice which have apparently taken a firm hold on the professional mind." "I for one," he says, "claim that it is wholly irrational for any organ to be treated locally unless it be with the co-operation and knowledge frequently of the man who knows about the body in its entirety." No one, he contends, does or can possess this knowledge to the same extent as the "general practitioner," otherwise known as the "family adviser." When a physician of this class—standing in the most intimate possible relation to the family— becomes a specialist and assumes the so-called higher rôle of medical or surgical consultant, his sphere of usefulness to the family diminishes. He is no longer in touch with the daily routine of practice in every direction, and hence when his advice is requested, he is not as well able as formerly to give it. Under these circumstances, the family is forced to take refuge with the

latest graduate of the schools or the poor fellow who has grown gray in harness, but who has never become a "success" and who is consulted merely because no better man can be found. The writer's solution of the difficulty is that the specialist, every time he continues treatment after being consulted by the family shall call upon the family practitioner whenever he needs such knowledge as the latter only can impart, and that the family practitioner, in such cases, shall receive a consultant's fee. In this way, he thinks, the family adviser would assuredly get back his own, both in the way of prestige and money.

The editor's comment on this suggestion is decidedly optimistic. The specialist, he intimates, may be found equal to the situation, after all. For "the ideal specialist is he who goes deeply into a subject and then extends his knowledge into every related field. Such a man is hardly to be looked upon as narrow or bigoted, or even incapable of entering into the finer appreciation of the idiosyncrasies and temperaments of his patients. It might not be straining a point for him even to act occasionally as 'family adviser.'" Neither editor has a word to say as to the rule hitherto laid down by every writer or speaker on this subject—that a long period of general practice should precede the choice of a specialty. This rule Dr. Gould discovered, some time ago, to be a mischievous fallacy, and his Boston colleague now takes the same view. The latter, in a recent article, begs the young practitioner "to do one thing well instead of many things ill, and not to waste valuable time in superficial so-called general practice. Make a choice at the very earliest moment of the line of work you design to follow. The generalist is indeed just as much a specialist as any other." If these are correct opinions and destined to prevail, "the practitioner of internal medicine" will doubtless, as the *Journal* assures us, long remain (though perhaps in a modified sense) the family physician, since it is scarcely conceivable that the average specialist will ever become "broad" enough fully to supply his place.

SHORTENING THE COLLEGE COURSE.

IN Harvard University a long-pending change has been at length effected, and any pupil at that time-honored seat of learning can now obtain his A. B. degree after only three years of study, instead of the conventional four. The taking of this important step is applauded by some of our contemporaries on the ground (as the *Boston Medical and Surgical Journal* expresses it) "that whatever may legitimately hasten the beginning of a man's life work is certainly to be encouraged in these days of keen competition and necessarily lengthened special professional training." President Butler, of Columbia College, however, has more recently come forward with a recommendation that the course for the baccalaureate be still further reduced to two years. Hereupon, the *Medical Review of Reviews*, under the heading "An Unexpected Retrogression," enters "the most earnest protest against such a surrender to the unending demand for the conferring of all college degrees in the shortest possible time. Medicine," it argues, "should be a learned profession in fact, and not a trade. If Columbia decides to grant the degree of A. B. at the end of *two* years' study, there is not a 'small college' in the United States which will not outrank the ancient college that we have delighted to honor." Dean Kirchwey, of the Columbia Law School, in his first annual report, declares himself in favor of Dr. Butler's suggestion. He thinks that the four years' course is not necessary as a preparation for the study of law, and that, if it were cut in half, many men would be enabled to get the combined advantages—now beyond their reach—of a decent preliminary education and the best available professional training. We have a strong misgiving that the curtailed course would be a failure in this respect. Indeed, we are persuaded that it would be better if Columbia were to abolish her College of Arts altogether. Several years ago, it was publically stated that the university authorities themselves were contemplating this radical measure, and perhaps it is what the proposed innovation actually points to.

DIGITALIS AND ACONITE IN CARDIAC DISEASE.

A PAPER read by Dr. Hobart A. Hare at the last meeting of the American Medical Association deals with one of the most perplexing of therapeutic problems, *viz.*, how to avail ourselves of the valuable powers of digitalis, at the same time escaping its disadvantages. The author is convinced that in the great majority of instances digitalis is administered in doses which are much too large and often continued over far too long a period. Such doses, no doubt, may in some cases, be necessary at the outset of treatment, but after a time they should be rapidly and considerably diminished. He has been surprised to find what excellent results can be produced by the use of such small amounts as one or two minims of an active physiologically tested tincture of digitalis given three or four times a day, the patient being of course required to rest, and so give his heart that therapeutic aid most needed when its compensation is ruptured. Digitalis can manifestly do more harm than good if the coronary arteries are so nearly closed that it is impossible for the heart to pump blood through them in increased quantity, and again if the myocardium is in a state of advanced degeneration. Dr. Hare is also quite sure that in a certain number of cases of valvular disease the patient does not require digitalis or any other cardiac stimulant for the relief of his cardiac symptoms; but, on the other hand, in addition to rest, will often be greatly benefited by the administration of aconite, which has a steadying effect on the heart through its influence on the vagi as has digitalis. By its sedative influence on the heart muscle in hypertrophy, which sometimes produces an excessive irregularity, and by its relaxing effect on the blood vessels, it pro-

duces good results. It is much easier for us to conclude, in the case of valvular disease, with dyspnea and disturbed heart action, that these symptoms are due to a failing heart than that they are due to a hypertrophy and an excessive activity. Such cases are frequently seen in men well developed in the muscular sense, and whose occupation has caused them to do heavy manual work or who take part actively in some of the severe athletic games. And not infrequently other cases are met with in which the use of well-balanced doses of aconite and digitalis has produced results which neither drug could produce by itself, although at first glance they are physiological antagonists.

In closing the discussion, Dr. Hare said that if you give digitalis without nitroglycerine to guard against the increased rise of pressure, you stimulate the heart without removing its burden; if you combine the nitroglycerine with the digitalis you both stimulate the heart and also relieve it of some of its burden.

THE USE OF SPLINTS AND COLD IN SCIATICA.

GENUINE sciatic neuralgia is not a common condition. Such neuralgias with no marked organic change are rarely seen and when they are found, their treatment is quite uncomplicated as rest for a few days, anti-rheumatic or gouty medications with local stimulus either by dry cups or slight blisters is sufficient as a rule. The sciatica which is seen ordinarily is not a functional disorder, but organic which exhibits inflammations of sheath, of the connective tissue and of the neurilemma. A better term for this condition is sciatic neuritis.

All physicians recognize the history of these cases. A patient comes to you with recurrent attacks of sciatic pain—until he states, he cannot stand long or walk without feeling discomfort, generally growing worse towards night. On examination the pain is seen to be worse especially at the exit notch and where the sciatic nerve pierces the fascia. Other places occasionally are found at which is experienced intense pain varying in their sites depending on the position of the inflammation. Different forms of motion seems to affect cases differently; in certain cases standing on the affected leg produces much violent pain at the exit point so that the man may fall as if he had been struck. Again a backward or forward motion excites pain, or the stretching of the nerve by extension of the leg causes an increase of the pain. Nerve-stretching, if this treatment is carried out will be unnecessary. It does cure sciatica, but, in a medical disease it is better to use medical means.

Fortunately, double sciatic neuritis is very rare, and when it exists it is due to spinal or caudal disease undoubtedly.

It is first necessary to eliminate all suspicion of rheumatism, syphilis, gout, trauma, or pelvic trouble, reducing the case to one of neuritis with depressing influences on sleep, appetite, and nutrition. Then comes the application of rest in bed. But it is necessary to do more than that, put the patient's leg at rest in a long splint such as is employed frequently in fractures of the femur. It is better that it extends from the axilla to the foot, kept in position by light bandages. Occasionally it is nice to have it made with a joint at the knee so that it can be fixed rigidly at any angle desired. If cold is to be employed, also a roughly moulded anterior splint, with a wooden attachment carried up laterally to the waist or axilla, or with a wire frame of like shape is required. It is necessary in actual practice to lessen the evils of rest. The ankle must be protected so that the heel does not carry the weight of the leg, it is well to have the knee in gentle flexion, changing it a very little at each dressing of the leg. Later in the treatment at each dressing it is well to flex and extend all the joints, slowly and slightly to prevent too great stiffness following. This must be done with caution and care. Bandages only sufficient to keep the splint in place are required, not as much as in a fracture. Occasionally a patient cannot stand a long splint, then an anterior suspension-splint is good in its effects, elevating the limb slightly. The results of this treatment in chronic sciatic pain, are excellent especially in reducing pain. Should this treatment simply ease the patient and does not help him out or if pain points remain, then a problem arises. Should the patient be well nourished and the case is not an old one, say three or four months old, continue the splint, and use daily Paquelin's cautery button on or over the pain-points, being careful not to destroy the skin so deeply as to injure the sensitive epiderm. This is highly recommended by Mitchell. If the case is more ancient or stubborn Mitchell suggests here dry cold used either with or without absolute rest. Remember that success in medicine depends on attention to details; this is the time for the application of dry cold in sciatic neuritis. An ice-bag kept on the painful nerve-tract day and night for two or three weeks is to be used, moderately filled with ice and water, so as to lie flat.

At the Orthopedic Hospital in Philadelphia, the leg is placed on a tin or copper gutter, on the under part of which is the ice-case, "three or four inches wide, with a screw opening one and one-half inches wide on the side, made to fit the thighs right or left, whilst another at need receives the calf. These vessels have bevelled edges at each end. There are openings on the side closed by screw covers, and these cases being filled with ice and water, are then surrounded with some good non-conducting stuff, so arranged as to leave a naked space of metal about three or four inches wide over the nerve trunk. When a thermometer is placed between the calf and the tin box filled with melting ice, the resultant temperature, the product of the skin-temperature and the ice, is about 59° F. It may rise above this, but does not fall below. By using ice in saturated brine with excess of salt, as long as the ice is not melted or the excess of the salt dissolved, the resultant temperature is as low as 46° or 47° F." As the pain disappears and is felt at

night or in spots only, lessen the length of use of ice, applying it at night, or an hour or two twice daily. Slowly get rid of the splint and if any pain-points stay, use the cautery over them cautiously. Cauteries are not so efficient as massage. Mitchell recommends that muscles of the leg be gently kneaded, without grease with a gradually deeper surface-rubbing in a downward direction (effeurage), along the line of the nerve. Mitchell's directions to the masseur are as follows: "Let him arrange the patient on his face, with pillows so placed as to be comfortable. Then let him slowly and gently, with the flat hand, extended fingers, or heel of the hand, follow the nerve trunk downward with gentle, deliberate friction, increased in force day by day. A half-hour of this twice a day is desirable. Let him deal with sections of the nerve at a time, with most attention to such as are yet painful, and let this treatment be done without any form of grease, until after a time the increasing pressure begins to wear out the skin, when he may use a little vaseline or other like agent."

It is a little troublesome to decide how much exercise the convalescent patient should take. At first he should use crutches, not sitting up long at a time to prevent pressure on the sensitive nerve.

As to medicines iron, cod-liver oil and strychnine if well borne are good with a mild diet. Strong galvanic currents have been found of service in the milder sciatic neuritis, but generally are painful and less efficient. Later should the wasted limbs not gain in size and tone, induction currents may be tried. Drugs locally to relieve pain, are of doubtful utility.

ECLAMPSIA

THE time was when puerperal fever was discussed as a specific disease and various theories were adduced in its explanation. As soon as its true cause was known, it was at once recognized to be of the same nature as fever following abortion and, still more generally, as sepsis of any other manifestation. Thus, while the term is yet in common use, it is in an entirely different sense from the old conception and it is dropped whenever scientific accuracy is aimed at, since any pyretic condition during the puerperium, might properly be termed puerperal fever.

It seems to us that it is time to drop the term puerperal eclampsia except in the same loose way and, thus, to put an end to the dispute as to the nature of a condition which cannot be explained on any single pathology. This need is all the more imperative because all sorts of convulsive seizures occurring during or after delivery are commonly called eclampsia, while no one ever thought of designating measles, thermic fever, etc., occurring after delivery, as puerperal fever, except by a gross error in diagnosis.

While the term eclampsia suggests a clinical picture of marked violence, and is more emphatic than the general term convulsion, it seems better, for this very reason, to use the more common and more general word, because the violence of the manifestation has no direct connection with the underlying condition. Again, the classic description of eclampsia, usually corresponds to a uræmic convulsion. If we adopt this definition, it is objectionable to multiply names. If we are going to call a uræmic convulsion by another name when it occurs in a woman after delivery, it would be logical to have one term for men and another for women and then, it might be asked, why not a still different one for children also? If, on the other hand, we continue to use the term eclampsia for any dangerous convulsive seizure complicating delivery and the puerperium, we encourage the tendency to draw superfine distinctions between a plain convulsion and one that presents unusual features of interest and between convulsions occurring during pregnancy and those at its termination beside raising the issue as to the exact duration of the puerperium. Moreover, we separate too widely the patient with nephritis or some other toxemic or nervous state who actually has a convulsion, from the one suffering from the identical condition who, accidentally, or as a result of careful treatment, escapes. It would be equally logical to distinguish between the gastric case that vomits and the one with the same condition, that does not.

A convulsion during labor or the puerperium may be due to hysteria, or the physiologic process at the close of pregnancy may precipitate an epileptic fit, there may be uremia or, as in several cases reported, an intestinal toxemia, or the toxemia may be due to some infectious process, or to various disturbances of metabolism, among which may be included interference with the hepatic function, either resulting from a demonstrable, chronic state of cirrhosis, or from a rather acute disturbance which seems to be a mild degree of that underlying condition which, in extreme cases, is marked by fatty degeneration. Again, it may be questioned whether the convulsion is not due to the use of an oxytocic drug and, therefore, exactly analogous to the convulsive state often seen in intentional abortion in the early months of pregnancy. The underlying state of the patient, even going so far back as her general temperament, has much to do with her responding reflexly, or failing to react, to the essential cause of a convulsion, yet her real condition is identical, whether she has the convulsion or not, and whether it is set down as a minor manifestation or whether it assumes the old-fashioned characteristics of "eclampsia."

The time is ripe to discard this misleading designation, to make an accurate diagnosis of the state of the pregnant woman, and to adhere to this or that method of prophylaxis or treatment of convulsions, or to this or that chemic explanation of the exact nature of the toxin or one or another mechanic theory of reflex response, without causing confusion by speaking as if we were always dealing with the same condition, which must be conceived of as having the same pathology, prognosis and treatment.

THE REVIVAL OF VAGINAL INCISION.

IN the days when abdominal operations were more dangerous and the mortality was high, the vaginal route was used by surgeons in many cases where laparotomy is now indicated. As early as 1844 Hampeis punctured the vagina in certain cases, while in 1870 Emmet advocated the same procedure. With the introduction of improved abdominal technique vaginal incision fell into disrepute and was practically abandoned until Landon revived it for pelvic abscess, in Europe, while Kelly and Henrotin did the same in this country

A study of the statistics of chronic inflammatory cases showed that high mortality existed in many extreme cases of pelvic abscess subjected to abdominal section. This led Kelly to revive so-called vaginal puncture, and in 1894 he reported the results of fifteen cases operated on under these circumstances. Despite the fact that all were desperate cases, all made good recoveries, and only one showed two years later an adherent tube.

The term "vaginal puncture" is a misnomer, for it implies, or suggests, the making of a small opening into the abscess. The success of the operation depends on free incision and drainage, hence the term "vaginal incision" is far more accurate.

Norris, in the *University of Pennsylvania Medical Bulletin*, calls attention again to this procedure, valuable in a certain percentage of cases. In cases of true pelvic abscess in which the patient is in wretched shape with the abscess bulging into the vagina, abdominal section would be folly. Even in such cases, if the patient is in excellent shape, the vaginal route is preferable. The operation has many good features; it can be performed in five or ten minutes and drainage is easy. It is not necessarily a curative operation, and it is often well to follow it with a more thorough operation, yet its value is now well established.

The cases in which vaginal incision is applicable are divided by Norris into four classes: (1) Abscesses in Douglas' cul de sac; (2) puerperal perimetritis or cellulitis; (3) extrauterine pregnancies ruptured and completely walled off by exudates and adhesions. The vaginal route should never be used in recently ruptured cases when the bleeding has not ceased or when it is free in the peritoneal cavity; (4) pyosalpinx and hydrosalpinx.

Vaginal incision is the preferable operation according to this authority in the first class of cases, and is also preferable in many of the second class. In recent extrauterine pregnancies abdominal incision is indicated, but in old cases where bleeding has ceased and the clotted blood and the ovum have become walled off or in which suppuration is going on, shown by a septic temperature, the vaginal route is indicated if the lesion can be reached safely. In the fourth class, this operation is indicated only when the general condition renders abdominal operation or a long anesthesia dangerous.

Norris reports a series of eighteen cases, all of whom had done well since the operation in general health, menstruation, weight and pregnancy, and yet in eleven of these cases the condition prior to operation was poor, while it was decidedly bad in five. Certainly this operation deserves at least respectful attention from surgeons meeting these classes of cases.

INCREASED LENGTH OF LIFE.

A TABLE has been prepared in the census office to show the increasing age of the population from decade to decade. In the volume of the census recently published, this increase was shown for the period from 1880 to 1900 by computing the average age of the population of the United States. In 1880 the average age was 24.6 years; in 1890 it was 25.6 years, and in 1900 26.3 years. The median age of the colored population from 1830 to 1900 increased only about half as fast as that of the whites. Many complex influences have co-operated in producing as a resultant this steady change in the age composition of the population. Among these may be mentioned the rapid progress of medical and sanitary science which has tended to increase the average length of life, the decrease in the relative number of children born, which has made the earlier age periods less preponderant numerically in the total population and the influx especially from 1840, of great numbers, of adult emigrants increasing the number in the older age periods. The difference between the white and colored populations is doubtless due in a great measure to the fact that these influences have wrought more powerfully upon the white than upon the colored race.

BORIC ACID DANGERS.

THE employment of boric acid for the preservation of food, and more especially of milk, has been prohibited in Germany by a governmental decree. This action was in consequence of a report by the Imperial Bureau of Public Health, of a series of observations made by one of the officers of that department on himself and four of his subordinates. The details of the investigation were worked out under all due precautions, and, of course, with the greatest accuracy and thoroughness—no less than 12 experts in physiological chemistry being employed on the metabolic problems involved. It was found that boric acid is eliminated very slowly from the body, and even after a single dose traces of the drug can still be found eight days later in the secretions. Hence it rapidly accumulates in the system, so that even small daily doses taken for a few days may produce serious results, more especially in the case of children.

In this country, boric acid, being regarded not only as a good antiseptic, but as absolutely harmless, is popularly used for the washing out of the mouth, nose and throat, and sometimes even of the stomach, with a freedom and frequency which may lead to serious dis-

turbances in delicate individuals. Some years ago, chlorate of potassium was commonly abused in a similar manner. Boric acid is a less dangerous agent, yet persons over solicitous about local cleanliness, might incur, from its incautious employment, a risk against which they should be warned by their physicians.

BIBLIOGRAPHICAL.

THE MEDICAL RECORD VISITING LIST for 1903.

This Visiting List is one of the most popular published, having been issued successively for a long period of years, and apparently, has given general satisfaction.

A complete revision of the reading matter in the front part of the list has been made this year. The table of Average Doses has been carefully revised and brought up to date, all the newer drugs of importance being included. A novelty now introduced for the first time into a Visiting List is the Obstetrical Chart, facing page four. This will be found useful for making quick estimates of the probable duration of pregnancy. In all respects an endeavor has been made to maintain the high standard of manufacture, as to paper, printing and binding, that has always distinguished this List.

QUIZ COMPENDS NO. 4. A compend of Human Physiology, especially adapted for the use of medical students by Albert P. Brubaker, A.M., M.D. Eleventh edition revised and enlarged with illustrations and a table of physiological constants. Philadelphia, P. Blakiston's Son & Co. Price, 80 cents.

This little compend has been thoroughly revised and new paragraphs inserted in connection with various parts of the text adding materially to the general value of the work.

MANUAL OF GYNECOLOGY. By Henry L. Byford, M.D. Third revised edition, containing 363 illustrations many of which are original. Philadelphia, P. Blakiston's Sons & Co. Price, $3.

Prof. Byford is recognized as one of the ablest teachers in his specialty in the profession. His work on Gynecology occupies a prominent position as a manual and is specially popular with the general practitioner for its clear description of the subject and its copious illustrations of major operations. The parts have been rearranged and those on anatomy, physiology and gynecological diagnosis and treatment have been put into the introduction. The main part of the book takes up the subject in about the order the author has followed in his lectures in which they can best be understood. Functional disorders which are made up largely of menstrual derangements are naturally placed at the end of the book, because they can be more profitably studied, after the diseases, of which they are symptoms, are understood.

SURGEON GENERAL'S REPORT.

Surgeon General Rixey makes several important recommendatons in his first annual report. Among them are the increase of the Medical Corps by 150, 75 of which to be appointed by the next Congress. A very important suggestion which we trust will be promptly adopted by Congress at its next session is to provide for a Woman Nurse Corps, consisting of one superintendent, eight head nurses and twenty-four of the second class, to be increased at the discretion of the Secretary. This will prove a most important addition to the medical department of the service. Another important suggestion is in reference to the educational development of medical officers for which he urges that after each cruise surgeons should be given a period of duty at some of the great medical centers where they could be in touch with the advance of the profession. To assist in questions of construction, selection of naval and coaling stations and camp sites he would have the Bureau of Medicine and Surgery represented on the General Board, the Board of Construction and in Inspection Boards.

THE MEDICAL EPITOME SERIES. Edited by B. C. Patterson, A.M., M.D. Lea Brothers & Co., Philadelphia and New York.

It is the design of the publishers of the Medical Epitome Series that as a whole it shall embrace the entire realm of medicine; the individual volumes authoritatively covering their respective subjects in all essentials and that a maximum amount of information in letter-press and engravings be given for a minimum price. In order to render the volumes suitable for printing and yet preserve the continuity of the text unbroken the questions have been gathered at the end of each chapter. The first volume of the series is on genito-urinary and venereal diseases by Louis E. Schmidt, M.Sc., M.D. The author has succeeded admirably in including in a compact space a clear and comprehensive survey of the subjects treated. The small volumes proposed in these series will prove of valuable service not only to students but also to practitioners in refreshing or supplementing their knowledge.

A TEXT-BOOK OF PATHOLOGY AND PATHOLOGICAL ANATOMY. By Dr. Hans Schmaus. Translated from the sixth German edition by A. E. Thayer, M.D.; Edited with additions by James Ewing, M.D., Professor of Pathology in the Cornell University Medical College, New York. Illustrated with 351 engravings including 35 colored inset plates. Lea Brothers & Co., publishers, Philadelphia and New York. 1902.

Pathology strictly interpreted might correctly be called pathological physiology. It is the science of disease, its action noted through symptoms. In certain pathological conditions we are unable to demonstrate anatomical changes in the affected region either in the growth or microscopically. Among these purely functional disorders belong many of the diseases of the nervous system, the neuroses, neurasthenia, hysteria and psychic affections. In many cases, on the other hand, we find such alteration of the anatomical structure of the organs that it is at once evident that the functions of the part must also have departed from the normal, or there are such variations in the circulation of blood and lymph that secondary lesions in the organs must inevitably follow. These alterations in the anatomical structure of the organs are the immediate object of pathology which is concerned like normal anatomy with their recognition and description. The history of medicine demonstrates that equally with advance in the perfection of methods of study the territory of the purely functional disorders diminishes, so that for many of these conditions the microscope and its accompanying technique have established an anatomical basis. Thus the domain of pathology is constantly being extended. The sixth edition of this book shows not only its popularity as a text-book in Germany but its adaptation to

the actual needs and requirements of the pupils. As "conciseness is the beauty of style" one notices in this volume the careful avoidance of argument, quotations and topics that should belong to books of reference, also the airing of personal opinion. Doubtless this volume will continue in America its Continental popularity.

THE PHYSICIAN'S VISITING LIST FOR 1903. 52nd year of publication. P. Blakiston's Son & Co.

In addition to the usual valuable features for which this little work is noted this edition contains an interesting article on Incompatability, Chemic, Pharmaceutic and Therapeutic, and another on the immediate treatment of poisoning.

A TEXT-BOOK OF THE SURGICAL PRINCIPLES AND SURGICAL DISEASES OF THE FACE, MOUTH, AND JAWS. For Dental Students. By H. Horace Grant, A.M., M.D., Professor of Surgery and of Clinical Surgery, Hospital College of Medicine; Professor of Oral Surgery, Louisville College of Dentistry, Louisville. Octavo volume of 231 pages, with 68 illustrations. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $2.50 net.

This text-book, designed for the student of dentistry, succinctly explains the principles of dental surgery applicable to all operative procedures, and also discusses such surgical lesions as are likely to require diagnosis and perhaps treatment by the dentist.

The arrangement and subject matter covers the needs of the dental student without encumbering him with any details foreign to the course of instruction usually followed in dental colleges at the present time. The work includes, moreover, such emergency procedures as not alone the dentist and physician, but also the layman, may be called upon to perform. For the dental student the work will be found an invaluable text-book; and, indeed, the medical beginner, also, will find its perusal of more than passing benefit.

THE TREATMENT OF FRACTURES. By Chas. L. Scudder, M.D., Assistant in Clinical and Operative Surgery, Harvard Medical School. Third Edition, Revised and Enlarged. Octavo, 480 pages, with 645 original illustrations. Philadelphia and London: W. B. Saunders & Co., 1902. Polished Buckram, $4.50 net; half morocco, $5.50 net.

This book is intended to serve as a guide to the practitioner and student in the treatment of fractures of bones, being a practical statement of the generally recognized methods of dealing with fractures.

In this edition several new fractures have been described, and an excellent chapter on Gunshot Fractures of the long bones has been added. The reports of surgeons in the field during the recent wars have been carefully digested, and the important facts regarding fractures produced by the small caliber bullet have here been concisely presented. In many instances photographs have been substituted for drawings, and the uses of plaster-of-Paris as a splint material have been more fully illustrated. In its new form, the work fully maintains the deserved reputation already won.

SAUNDERS' MEDICAL HAND-ATLASES. Atlas and Epitome of Traumatic Fractures and Dislocations. By Professor Dr. H. Helferich, Professor of Surgery at the Royal University, Greifswald, Prussia. Edited, with additions, by Joseph C. Bloodgood, M.D., Associate in Surgery, Johns Hopkins University, Baltimore. From the Fifth Revised and Enlarged German Edition. With 216 colored illustrations on 64 lithographic plates, 190 text-cuts, and 353 pages of text. Philadelphia and London: W. B. Saunders & Co., 1902. Cloth, $3.00 net.

This worthy addition to Saunders' Series of Hand-Atlases will be found of inestimable value in facilitating the student's introduction to the important department of fractures and dislocations, and as a ready reference book for the use of physicians in general practice. This department of medicine being one in which, from lack of practical knowledge, much harm can be done, and in which in recent years great importance has obtained, a book, accurately portraying the anatomic relations of the fractured parts, together with the diagnosis and treatment of the condition, became an absolute necessity. The work before us fully meets all requirements. As complete a view as possible of each case has been presented, thus equipping the physician for the manifold appearances that he will meet with in practice.

The author has brought together in this work a collection of illustrations unrivalled for accuracy and clearness of portrayal of the conditions represented, showing the visible external deformity, the X-ray shadow, the anatomic preparation, and the method of treatment. We have no doubt that the book will be received with the favor it demands, filling, as it does so admirably, a want long felt.

THE DISEASES OF INFANCY AND CHILDHOOD. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons, New York; Attending Physician to the Babies' and Foundling Hospitals, New York, etc. With 225 illustrations, including nine colored plates. Second Edition Revised and Enlarged. New York: D. Appleton & Company, 1902. Pp. 1161. Octavo.

The author has taken the opportunity afforded by the issue of a second edition of his valuable work, to carefully revise and in part re-write his text, in order to keep it abreast the times for every-day needs.

Pathology and the description of lesions has been emphasized in the interest of a proper understanding of symptoms and diagnosis. The chapters on the important subject of feeding have been entirely re-written and much new matter added, including "weight charts." The illustrations are mostly from original sources. There is no doubt as to the usefulness of this excellent book.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago, etc. Third Edition, Revised and Enlarged, with 474 illustrations, of which 60 are in colors and 22 full-page plates in colors and monochrome. Lea Bros. & Co., Philadelphia and New York, 1902. Pp. 761. Octavo.

The author, in attempting to afford a practical work on gynecology, has preserved as far as possible the unity of each pathological process as it may affect consecutively the different pelvic organs, in order to afford a more rational and more comprehensive idea to the student. Under this plan one may recognize more easily and emphasize more properly the functional unity of all the reproductive organs, and be able to individualize the

various morbid processes and the relations of these processes to one another.

The present edition has been thoroughly revised, and about one hundred pages of new matter added. A pronounced feature of the revision will be found in the method in which the subjects are presented, thereby making the book much more useful for class-work and for reference. The illustrations are exceptionally clear.

WOOLSEY'S SURGICAL ANATOMY.—Applied surgical anatomy regionally presented, for the use of students and practitioners of medicine, by Geo. Woolsey, A.B., M.D., Professor of Anatomy and Clinical Surgery in the Cornell University Medical College; Surgeon to Bellevue Hospital, etc. Octavo, 511 pages, with 125 illustrations, including 59 full-page inset plates in black and colors. Cloth, $5, net. Leather, $6, net. Lea Brothers & Co., Philadelphia and New York, 1902.

The author understands anatomy, both as a science in itself and as a means to an end. It underlies the whole of medicine, and constitutes a large portion of the practice of surgery. Clear ideas of the structure underneath must precede any use of the knife. Consequently a book like the present, which joins anatomy and surgery, is indispensable to all who have or may have surgery to do, be they surgeons, general practitioners or students. To the latter class it would be doubly helpful, for the practical applications of any subject are powerful digestants, promoting the solution and assimilation of the masses of crude anatomical facts with which students load themselves, aiding and prolonging their memory as against the dreaded day of the State license examinations, and qualifying them for the practice of surgery. Such a work relieves the study of anatomy of much of its difficulty, and will be one of the books which the new graduate will carry with him from college to office. It is a good investment for any one. The author has abundantly illustrated his pages with large and handsome plates in colors.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENTS.—Their applications to various diseases of the body. Lectures delivered before the training school for nurses before the different hospitals and medical colleges of Philadelphia by Kurre W. Ostrom from Royal University of Upsala, Sweden. Price $1. Published by P. Blackiston Son & Co.

This is the fifth edition of a small manual first published twelve years ago. This edition has been thoroughly revised and enlarged and contains one hundred and fifteen illustrations in which every movement in medical massage is shown and described.

PEDIATRICS AND ORTHOPEDIC SURGERY. Edited by W. S. Christopher, John Ridlon, Samuel B. Walker, July, 1902. Chicago, 40 Dearborn street.

The specialties of pediatrics and othopedic surgery are very ably handled in all their departments by the accomplished editors. All the important new information and the literature of these specialties during the past year has been presented in a condensed form with comments by the editors.

THE MEDICAL NEWS VISITING LIST FOR 1903, with its well-known practical features, is ready for delivery to its numerous patrons by Lea Bros. & Co.

CORRESPONDENCE.

MORE ABOUT THE HONEY BEE.

To the Editors of the MEDICAL TIMES:

In a communication in your October issue Dr. Henry Parker says, in writing about the venom of the honey bee: "Who can say how long before science will throw open the doors and deliver it for the benefit of mankind, thus adding a new qualification to this busy and interesting insect?" The use of the honey bee in therapeutics is already an established fact and has been for several years.

While the regular profession has been working in laboratories over synthetical products, the bulk of which are useless, the "irregulars" have been working in the backwoods and have found many treasures in "green." The honey bee subsists almost entirely on the product of the fields and woods. And it takes this little insect to transform the nectar into a delicious edible, sometimes, however, giving us a taste of the undesirable.

What is the use of going over the same ground that has been traversed in this investigation? Why does the regular profession investigate the physiological and therapeutical actions of drugs already investigated to a large extent? The Homeopaths and Eclectics have used Apis Mel in therapeutics for years, and the regular profession are just investigating its virtues! Why not start where they have brought the subject, and not go over the same ground? Give credit to whom credit is due. Use the remedy as they have used it and find new uses. The following are some of its therapeutical uses. When you have the following conditions give Apis: Acute swelling or edema of the cellular tissues, no matter what the disease; edema of the throat and nasal passages in diphtheria and scarlet fever are quickly relieved, soothing the kidneys, relieving the irritaton and congeston of these organs. In irritable bladder, especially of women, where there is constant desire to micturate, the urine scanty and high colored, causing soreness and burning. Many cases of passive hematuria will yield promptly to its influence. Edema glottidis is often relieved, so is dropsy that appears suddenly. Retention and suppression of urine in children and the aged as a result of atonicity or feebleness, is often quickly relieved. The use and the investigation of this remedy along these lines will establish its virtues in practice. We need to get out of the ruts of exclusive investigation and jump over the fence into our neighbors' (Homeopaths' and Eclectics') pastures and inquire diligently for the way of success in therapeutics. And do not try to "swallow" these schools—they may produce a big lump in your throat. I notice that this is the trend of a good many regular journals to-day. Accept their work, give them credit for it, have peace in camp and relieve suffering humanity. Get down to facts in therapeutics with not so much tomphoolery.

J. G. PUTNAM, M.D.

Cartersburg, Ind., Oct. 13, 1902.

THE OLD AND THE NEW IN THE CARE OF THE INSANE.

IT may be instructive as well as interesting to look back and contrast the old with the new in the care of the insane—during the past century. We may learn by these contrasts what has been accomplished in the struggle for justice and humanity in the care of the sick and helpless. In considering the general care of the insane, it is indeed a promising sign of the times, that methods, which are obviously humane, merciful,

and kind, are classed as "advanced," and all that is harsh and cruel is known as "antiquated." Restraint has almost entirely disappeared—at least from our best hospitals, and the comfort and happiness of patients is more under consideration than a morbid uneasiness as to their possible escape. The secret of success in the treatment of disease in general is to abandon hard and fast rules, and to consider what is called for in the individual case as to hygiene, food, medicine, environment, and general discipline; and so it is with the care of the insane, and for them a large attention is also afforded as to their diversion and entertainment with a liberal supply of kindness and encouragement, and the removal of all that is possible in the reminding of their misfortunes.

If there be those who begrudge liberal appropriations for our hospitals for the insane, they should consider that municipal neglect is the cause of much of this spread of mental disease. If cities and towns are willing for the sake of the income they secure from liquor licenses to encourage intemperance, then they must be willing to provide humanely for the victims of intemperance. The public must be taught to realize that for every dollar secured for license, two at least must be put out for the care of the invalids resulting therefrom.

If the children of the community are permitted to grow up in the midst of vice, evil associations and with evil habits, a large class of public wrecks must be the inevitable result and require State support later on.

If the State suffers under the burden of increased taxation through neglect of the enforcement of the laws of God and of man, preventive treatment is the obvious remedy. But the paternalism of government must also recognize the great injuries resulting to brain and nervous system and health in general from the increasing effects of overstudy in the young. A control is needed over the methods of selfish and irrational educators, whose mistakes are strewing the country with the wrecks of our fairest and our best.

In looking back upon all that noble men of the medical profession have accomplished in the humane and scientific care of the insane, it is right and just to refer to Dr. Pliny Earle, formerly the honored and wise Superintendent of the Northampton Hospital for the Insane. What he dared, and what he did, and what he hoped for, are the legacies he left to those who follow after him.

All that hospital is, and the attainment of its high position among the institutions of this country, was not accomplished in a *short* time or by easy stages. It required continuous effort, moral courage, devotion to a high standard of duty and a strong faith in the cause of noble reform, and all of this in the face of indifference, discouraging doubts and the sneers of pessimists.

To the town it is a credit, to the State an honor, but higher than these honors is what it all means to the poor people to whom it represents everything in life—a home, or haven, protection, happiness, and all possible health. Many may not be able to appreciate what all this stands for, but many an aching heart of mother and wife, father and husband, child or friend, bravely waiting for the loved ones who cannot return, will breathe a prayer of gratitude to God that those they love are safe from cruelty and harm—that mercy and enlightenment has snapped the cruel chains, flung away the straps and buckles and the strait-jacket, and held a warning finger of admonition for those who would inflict mental or physical chastisement.

Yes, far more than this; the quiet, well-furnished and comfortable wards and rooms littered with books and daily papers, and with the conveniences and many of the luxuries of modern life afford to the distressed invalids a physical comfort they never knew in their homes and provide them with opportunities for higher and nobler aspirations, and in many cases well restore them to their families better men and women, and more useful and honorable members of the community than they ever were or expected to be before.

What a contrast is all this to the sad, brutal days when the poor, the aged, and the helpless were annually sold in New England to the lowest bidder for their support; when mad-houses—when any existed—were as prisons for demons; when men, and women, too, were chained by wrist and ankle to the floor; when the outcries of delirium and despair were answered with kick or cuff, and when the exhaustion following the blows of the cruel lash subdued and silenced the sufferers for the time being. All these things be it said to our shame in New England have not yet passed away—the mentally-affected still drag their heavy chains with a weary, dogged hopelessness. Medical men still stand by and see poor, nervous, frightened sufferers lashed down to beds, and even to the floor, unable to move more than the tired, dizzy head from side to side, while indifferent and often cruel attendants make no note of the raw and painful wounds of the restraining bands at wrist or ankle. It is to us like a light-house shedding abroad its clear light of mercy, of pity, that this hospital stands bravely and honorably for all that is humane and scientific in the care of the mentally diseased, and asks, with the good record of the past as the highest recommendation, for seasonable appropriation to still further extend her noble charity.

The great task of the physician is often neither appreciated by the patient for whom he is conscientiously doing his best, or even by the patient's friends who should be *most* interested in the attainment of amelioration or cure. One great obstacle in the treatment of the insane is the difficulty in overcoming injurious habits, often deeply seated. Patients arrive in the hospital with habits and traits which are doubly aggravating in their obstinate and despairing condition of mind. All these inborn and inbred sadnesses and vulgarities must be either removed or so controlled as to prevent annoyance and distress in those with whom they must associate. The hospital physician has therefore an additional care and worry in this fact alone, and in the task of reformation morally, mentally, and physically, discouragements are encountered which would steel the heart of any one who was not conscientiously laboring for the real and lasting welfare of these unfortunate patients.

The patience, tact and perseverance required from physicians and attendants, hour after hour and day after day, is a severe strain on the nervous system, and yet its happy operation may be when least expected, the turning ponit from disease to convalescence.

It is gratifying to recall that Dr. Pliny Earle was among the first to recognize the importance of affording out-of-door employment in the treatment of the insane, and the method is now very generally made use of in our best institutions. Acute cases and chronic derive benefit from the diversion and healthy exercise. Entertainments afforded in the chapel are highly enjoyed, and patients look forward to their occurrence, and find interest in the discussion of what has been presented and in that which is to come. The pleasing, comforting effects of music, the strength and cheer of moral, religious exercises, the benefit from instruction in physical culture classes—all these are means of value in modern methods of care. The liberal use of bathing privileges and the incentive for habits of cleanliness, regularity and

punctuality add their share in the general welfare. In the difficult problem of providing suitable attendants, care is exercised in weeding out those of doubtful character and of evil habits. Absolute kindness and consideration for the temper and disposition of the patients is insisted upon. With encouragements and discouragements the work goes on to maintain the high standard of excellence. Nor is this all, for the motto is, as of old, Excelsior.

FABISMUS (OR BEAN DISEASE).

To the Editors of the MEDICAL TIMES:

You will please pardon me for intruding on the space of your most estimable journal, but I am exceptionally interested in the article appearing in your column of Retrospective Dietetics, October number, page 316, of Dr. Cipriani, in that it solves a problem of a case that I had under my supervision this past June, *i. e.*, on the night of the 22d I was called four miles to the country, and upon arriving at the place I found Archie B., aged thirteen years, who had been in good health up to within a few days of present attack, vomiting violently at intervals of 15 minutes to 1 hour, with severe chill and temperature of 103.2° F., but no discharge from bowels. Upon inquiry, I found that before I had arrived he had vomited a quantity of green beans, which he with three other children had been in the habit of eating while gathering beans for market, but the portion I saw was simply blackish green bile. Tongue flabby and heavily furred with yellowish white coat. I at once gave 30 m. Fl. Ext. Lobelia with ℥ii of brandy, in a glassful of water, which was retained for 15 minutes and followed with free copious emesis, which cleansed the stomach, then followed that with

℞ Calomel ..... gr.x
Leptandrin ..... ℈j
Sodi Bicarb. ..... ℥j

M. ft. chart 10.

Sig. One every hour till bowels move freely. Also used cold sponge baths for fever until it became nearly normal, 100.4° F. Following morning, 23d, bowels had acted freely, vomiting stopped, temperature 102.6°, pulse 120, respiration 28. Yellow jaundiced appearance of skin, tongue furred, some tenderness in right iliac region, but no perceptible lump or swelling, stools, last two, liver action. Gave

℞ Antikamnia ..... ℥i
Quinine ..... ℥ss
Salol ..... ℥i

M. ft. caps xii.

One every two to three hours for fever and soreness in bowels, with cold pack on abdomen as directed.

24th. Condition about the same as day previous with exception of considerable active delirium and slight tympanitic condition of bowels. Ordered

℞ Glycothymoline ....(Kress) ℥jj
Aqua .....(Boiled) ℥xxxii

For enema night and morning. Bromidia for delirium and capsules every four hours. Case continued about this way with some changes in symptoms, some better, some worse, for ten days, when fever left entirely, leaving patient very weak and anemic, but with protonucleine (R. & C.) 2 tablets four times a day in connection with bitter tonics, recovery was uneventful.

This case has always been a question in my mind whether it could have been the result of eating the green beans, or was simply the result of a bilious malarial condition, but it corresponds so closely to Dr. Cipriani's case that I now believe it was, no doubt, due to the poison ingested from the bean. At one stage it took on the appearance of typhoid, but with the antiseptic treatment it very soon disappeared. The delirium continued for five days, at times very active, and again, muttering, but all is well that ends well, and it is these rare cases that oftentimes need the greatest skill.

J. R. SMITH, M.D.

Warsaw, Mo.

RETROSPECTIVE THERAPEUTICS.

Treatment of Prolapsus Ani in Children with Paraffin Injections.—Karewski (*Ctrlbl. f. Chir.; Med. Record*) has treated eight cases of prolapse of long standing and which had resisted other methods of treatment by injecting a ring of paraffin (melting point 56 to 58° C.) above the anus. The patient's bowels were kept open with laxatives for two days, and then, on the afternoon of the day before the injection, were checked by giving him 15 to 20 grains of bismuth. After disinfecting the operative field the prolapse was reduced and one finger kept in the rectum. Using it as a guide, a ring of paraffin was then injected around the anus between the skin and mucous membrane, only a single needle puncture being made. Bismuth was again administered to prevent defecation during the next twenty-four hours. Of the eight cases treated in this way only one failure is reported, and no infection occurred in any of them, even when defecations followed immediately after the operation.

The Thermometer in Tuberculosis.—Practically all cases of early pulmonary tuberculosis have an elevation of temperature during some period of the day, yet the thermometer will often fail to register these changes if the mouth or axilla be its resting place. Hartnell (*Phila. Med. Jour.*) calls attention to this time-worn fact. He considers that the rectal temperature of a healthy man should be normal early in the morning. After breakfast it will rise to 99° F., and exercise will have the effect of raising it a few tenths of a degree higher. In the evening it should fall to normal. In a series of cases of pulmonary tuberculosis he took the temperature in the mouth, axilla and rectum, and the results conclusively prove the utter unreliability of mouth and axillary temperatures. The oral and rectal temperatures did not differ greatly in the higher ranges, but between 99 and 101° F., there was usually much discrepancy. It is just in this range that thermometric measurements are of the greatest importance in tuberculosis, involving, as they often do, the question of diagnosis as well as the good or evil results of exercise. It is a general principle that increased temperature precludes active exercise, yet how rarely is the rectal temperature ascertained by the busy practitioner before he advises this therapeutic measure. It is certainly not so agreeable to the patient, but when its importance is explained there is rarely any complaint.

Is McBurney's Point of Less Diagnostic Value Than We Have Supposed?—Sir Frederick Treves, in his Cavendish lecture on "Some Phases of Inflammation of the Appendix," announces first that McBurney's point is not over the base of the appendix and that the tenderness over this point is not characteristic of appendicular inflammation. He insists that this tenderness is not only common in patients suffering from colitis, but that it often is present in perfectly healthy persons. As a surgical landmark he much prefers Munro's point, described by Merkel as follows: "The spino-umbilical line runs from the anterior superior iliac spine to the navel. The point at which it crosses the outer edge of the rectus is called 'Munro's point.'"

Eucalyptus in Diabetes.—The following is from the *British Medical Journal* of May 24th:

New remedies for diabetes are not uncommon, but none of them has so far stood the test of experience. Nevertheless, a suggestion which we owe to the late Mr. James Dick, the Glasgow millionaire, and to Mr. A. G. Faulds, of the Glasgow Royal Infirmary, is one which should be tried by those who have opportunities of treating diabetic patients. The origin of the suggestion as told by Mr. Faulds is that some years ago Mr. Dick was traveling in New Zealand, and knowing that an old schoolmate of his was in the country he determined to hunt him up. After considerable journeying he found his old friend, and a most agreeable interview followed. During this meeting the friend mentioned that his health had failed some years after he had settled in New Zealand, and that the doctors had treated him for diabetes with but little effect. One day, however, having contracted a horrible cold or influenza, a neighboring old native lady informed him that if he went to a certain eucalyptus tree and gathered some of the fresh leaves and partook of an infusion of them twice or three times daily, it would cure his influenza. The patient acted upon this advice at the earliest opportunity. He made an infusion of the fresh leaves and took a small teacupful night and morning, with the result that it not only cured his influenza, but caused his diabetes also to vanish with all its symptoms. Mr. Faulds has endeavored to test this remedy in the following manner: He obtained some of the dried leaves of the Eucalyptus Globulus, of which an infusion was made in a teapot by taking one tablespoonful of the broken leaves, about 60 gr. in weight, and adding 6 oz. of water, allowing it to infuse for half an hour and then adding a little saccharin. This quantity was given twice daily, and the remedy has been tried upon 46 cases in all, in 15 of which Mr. Faulds reports total disappearance of the disease, and so far as can yet be judged a complete cure. The substitution of eucalyptus oil and eucalyptol was followed by no effect at all upon the sugar, and Mr. Faulds is unable to indicate to what constituent in the chemical composition of the infusion the therapeutic effect is due.

Bath Treatment of the Insane.—W. Alter, an assistant physician at one of the Provincial Hospitals for the Insane in Germany, has an article on "The Bath Treatment of the Insane" (*Ctrlbl. f. Nervenheilkunde u. Psych.*, March, 1902). In bearing testimony to the efficacy of this method of treatment he confirms what so many others have asserted who have used it. The temperature of the baths varied from 34° C. to 36° C., and the patients were kept in for from two hours up to twenty-four hours, or longer. Usually the patients rested on a sheet suspended beneath the water, and another sheet covered the whole bath excepting at the head end. Their meals were served to them in the bath. It was found that on an average one attendant to every four patients in baths was required. The results described were such as are seldom obtained by any other method. At the commencement there were 54 patients, almost all in single rooms, and after a few months none occupied single rooms; and whereas previously most were noisy and restless the whole or part of the night, in spite of the administration of drugs, after the institution of the bath treatment it was a rare thing to find a patient noisy at night. The baths also seemed to improve both the mental and physical condition of the patients. Dr. Alter is of the opinion that if the difficulty as regards number of attendants and sufficient bathing accommodation could be overcome, the bath treatment should be introduced into every hospital for the insane.

Lemon-Juice in Diphtheria.—A German professor of Königsberg, has drawn attention to the power which lemon-juice has of destroying the diphtheria bacillus. He testifies that he tried it as a gargle in 15 cases of acute diphtheria and 80 other cases of throat disease, and that only one of these proved fatal. The lemon-juice must be diluted when used as a gargle, but slices of lemon may also be given the patient to masticate, the pulp being always rejected.

The Medicinal Treatment of Gall Stones.—According to the experience of Dr. William H. Thomson, scarcely one in thirty of those who suffer from gall stones needs to submit to an operation. He states, in an article in the *Medical Journal* for April 19, 1902, that he has in his private practice full notes of 31 cases, and in only one of these did he think it necessary to advise operation. Four of his patients, all women, have died from other causes, but the others have improved under medical treatment. The biliary calculus is not a "stone," he points out, but more like a piece of hardened cheese, light enough to float when dry and capable of solution in a number of substances.

Dr. Thomson thinks the best remedy for gall stones is olive oil, not because of its solvent action upon the stones, but because it increases the flow of the secretions from mucous membranes. The enormous doses formerly recommended are entirely unnecessary. He says:

"The action of olive oil is cholelithiasis I conceive to be this: In the first place, it is a food oil and as such, if taken in a quantity which would not disturb the stomach, that is, about one to two ounces, it is soon passed into the duodenum to excite there, as all fats do so excite, an increased flow of the normal duodenal secretions, namely, the biliary, the pancreatic, and the secretions of Brunner's glands. No larger amount than from an ounce to two ounces is needed for this purpose, because increased secretion from intestinal tracts lower down is not indicated in this condition, while a free flow of watery bile is just what we should aim to secure with as little disturbance of other functions as possible. For this purpose I direct the oil to be taken in a cup of hot milk at night, the milk greatly assisting the tolerance by the stomach of such a quantity of free oil. To patients with cholelithiasis this dose is given for ten consecutive nights, then intermitted for about a week to avoid gastric disturbance, and then resumed again for ten more nights.

"If recorded clinical experience is to be admitted at all, I think that I can claim from my notes of the histories of patients with this complaint a measure of success demonstrated which cannot be accounted for by any doctrine of chances. The record is not that of immediate relief in any case, but instead a progressive amelioration of symptoms with the paroxysmal attacks becoming lighter and fewer until they ceased permanently. The duration of the treatment above outlined varies as a rule, according to the previous chronicity of the case, from two weeks to four months."

Olive-Oil in Treatment of Stenosis of Pylorus or Duodenum.—Cohnheim reports 11 cases of stenosis of pylorus and duodenum in which olive oil was tried as a last resort. Immediately after rising in the morning the patient took about 100 to 150 cubic centimeters of warmed olive oil, and then reclined on the right side for 15 to 20 minutes. Food was not permitted until one hour afterward. If the pains persisted, 50 cubic centimeters were taken before retiring. There was no nausea or diarrhea, and all repugnance to the oil rapidly disappeared. All discomfort, cramps and stagnation

was relieved. Some of his patients took 50 cubic centimeters of oil one hour before eating, or it was introduced through a sound. The olive oil arrests pain and friction and also is a food. Furthermore, the author finds that it makes surgical interference unnecessary in many cases, even where there is gastrectasia. It is entirely devoid of any action in nervous or hysterical stomach cramps. It is especially effectual in relieving cicatricial stenosis of the pylorus and duodenum. Here its action is a purely mechanical one, as it simply lessens friction. Cases of relative stenosis manifested by continuous hypersecretion and pyloric spasm a few hours after eating are also much improved and often cured by this treatment. He advises a trial before consenting to an operation, as all his cases were of the kind usually considered hopeless.

Overeating a Sin.—It is a part of our morbid civilized life, says the *Homeopathic World,* that eating and drinking are made servants to morbid passions and desires. They form a most important ingredient in our civilized life, so that our days are divided by our meals. It is considered no sin to overeat, whilst in reality it is an absolutely immoral act, and from a high standpoint a crime for which the body has to suffer at the high tribunal of that law which none can transgress with impunity.

Value of Honey as Food.—Starch and sugar, when eaten, undergo a digestive change before they are assimilated, says Dr. Holbrook in *Health.* In honey this change has been made to a considerable extent by the bees. It is easy of assimilation, and concentrated, and furnishes the same element of nutrition as sugar and starch—imparts warmth and energy. As a medicine, honey has great value and many uses. It is excellent in most lung and throat affections, and is often used with great benefit in place of cod-liver oil. Occasionally there is a person with whom it does not agree, but most people can learn to use it with beneficial results. Children, who have more natural appetites, generally prefer it to butter. Honey is a laxative and sedative, and in diseases of the bladder and kidneys it is an excellent remedy. It has much the same effect as wine or stimulants, without their injurious effects, and is unequaled in mead and harvest drinks. As an external application, it is irritating when clear, and soothing when diluted. In many places it is much appreciated as a remedy for croup and colds. In preserving fruit, the formic acid it contains makes it preferable to sugar syrup, and it is also used in cooking and confectionery. Honey does not injure the teeth as candies do.

Treatment of Rheumatism by Lemon Juice.—Desplats (*Jour. des Sci. Med. de Lille*) reviews his experience with this method. The first case that he treated was that of a young girl, who had been attacked primarily with angina, probably grippal. She had been temporarily relieved by salicylate of soda, and then her condition became stationary. At this time the administration of lemon juice was begun. In about eight days there was a marked improvement. At the end of fifteen days the patient was entirely cured, and left the hospital. The second case was treated with salcylates for three weeks without much success, but as soon as the lemon juice was begun the results were the same as in the first case. In fifteen days there was a complete cure. In the second series of cases the first case was treated from the beginning with lemon juice. The results were encouraging, but at the time of the report it was only the ninth day of the treatment. Another case, a chronic rheumatic, was relieved of her severe pain. The treatment is begun by giving two lemons, this number being increased to four, then to six, and so on till the patient shows a marked improvement, and then the dose is kept uniform at what is considered the effective point.

Fruits for the Sick.—There are many time when the sick should not eat raw fruit, but can take cooked fruits. Any and all fruits may be cooked—and in many different ways—all attractive. Compotes are fresh fruits stewed; they are usually made by first making a syrup of three and one-half cups of sugar and two and one-half cups of water, and boiled five minutes. The time must be counted from when it actually begins to boil. When it is boiling, drop the fruit in carefully, a few pieces at a time, so that they will not break; cook until tender, but firm enough to keep their shape; remove with a skimmer; arrange daintily on a dish, then boil down the syrup until thick, then pour it over the fruit. Let cool before serving. Apples, pears, peaches, apricots, and oranges may all be cooked in this way.

Fruits not only furnish nutriment; they carry water and various salts and organic acids into the system in order to stimulate appetite and improve digestion. Cooked fruits may be eaten with any meal, but when fruit is used for special dietetic purposes, its effect is always more pronounced if taken alone, either at the commencement of meals, or better, between them. Fruit in general is less wholesome when eaten out of its natural season.

Many persons cannot eat strawberries because of the acid they contain. A little white pepper sprinkled on the fruit counteracts the effect of the acid without impairing their delicate flavor.

One of the most pleasing mixtures of fresh fruits is that of large, ripe, red raspberries and white currants, blended with a syrup flavored with orange and lemon juice, and frapped. Punch or fruit mixtures of this kind may be served at various times, as the first course of a luncheon or breakfast in warm weather, as dessert at an informal luncheon or in place of and in the same way as a frozen punch after the roast. It can be made of all sorts and conditions of fruits, canned, preserved or fresh. In such combinations, the selection and blending, the flavoring and serving, are matters of individual taste and cultivation.

Bananas, which contain a large percentage of starch, are highly nutritive. If eaten at the beginning of a meal they are better baked. To prepare six bananas in this way, make a syrup of the juice of two oranges, one lemon and half a cup of sugar. Put the bananas in a flat granite baking dish and cover with the juice. Put in a fairly hot oven and bake for twenty or thirty-five minutes until the fruit cooks fairly clear. Baste occasionally, and if necessary turn the bananas over once so that the juice may be distributed evenly throughout. After they are baked, remove from the syrup and cook the latter to a jelly; then put the jelly over the bananas and chill. Serve as a dessert.

For a person recovering from typhoid fever bananas cooked in this way are said to be very beneficial. Care should be taken, however, that they are thoroughly baked, so that all the starch has been turned to sugar.

The Pineapple in Medicine.—In the *Lancet* for June 28, 1902, appeared a letter from Wyatt Wingrave on the value of the pineapple as a proteid digestive. Its active principle is bromoline, which has long been used in the preparation of Mosquera's beef jelly. Usually too much pineapple is eaten at a time. To obtain its full digestive value, one quadrant of a ½-inch thick slice is ample for a meal; it should be well masticated, and the fibrous part rejected. Preserved pineapple has practi-

cally no digestive power, and, similarly, cooking completely destroys this action.

But, according to this writer, the pineapple has a powerful (and valuable) solvent action upon plastic exudation, such as diphtheritic membrane. Indeed, the therapeutic action of the fruit presents many possibilities, and Wingrave also recommends it for corns, and to soften the horny papillæ in keratosis of the tonsil.

The *Medical Times and Hospital Gazette* suggests that this agent might also prove useful in some diseases of the skin, especially in those attended by the formation of crusts.

The Dietetics of Tuberculosis.—The concluding deductions drawn from an extended study of this subject by W. H. Porter, in *American Medicine*, September 20, are:

1. That a predisposition to tuberculosis is inherited.
2. That tuberculosis *per se* is never inherited, but is always acquired after birth.
3. The disease can be fed into or fed out of the human species.
4. The chief problem is the dietetic treatment of tuberculosis is, first to overcome the general malnutrition, and next to establish a high grade of local nutrition at the infected focuses.
5. The composition, digestibility and percentage absorption of the various foodstuffs and the oxygenating capacity of the system are accurately known.
6. By this knowledge the quantity of food taken can be accurately adjusted, so that the full heat production and constructive utilization of the proteids are secured.
7. The oxygenating and carbon dioxid excreting powers of the system must not be exceeded if the best results are to be secured.
8. By following these accurate laws systematically a perfect diet can be arranged, and the abnormal and pathologic conditions can be changed to the normal, physiologically speaking.
9. The most difficult problem to contend with in the dietetic management of tuberculosis is the loss of appetite and the inability on the part of the system to digest and utilize perfectly a sufficient quantity of proteid material to maintain life, and, at the same time, repair the damage already wrought.
10. When this is accomplished a large percentage of tuberculous patients are rapidly and permanently cured, more so than by medicinal treatment or simple climatic changes.
11. A universal adherence to these laws through a century might result in a complete eradication of tuberculosis from the human species.

Flies as a Source of Cholera Infection.—Andrew MacKaig, M.B. (*Edinburgh Med. Journal*, Aug., 1902), in a report of a cholera epidemic which ocurred in India in 1900, emphasizes the necessity of the prevention of contamination of food by flies. He considers this an important source of infection since in his observations many persons who drank water that was certainly sterile, but who ate food upon which the flies, which were innumerable during the epidemic, had been allowed to settle, suffered from the disease. He, with two European associates, were attended, while at meals, by servants who, by waving towels, prevented the flies from settling upon the food, and none of them had the least manifestation of cholera.

In closing, he expresses the opinion that during cholera epidemics the people should be warned against flies, and suggests that all practicable methods of fly destruction should be employed.

Sterilization of Milk.—Concerning the sterilization of milk, Dr. Vaughan, of Ann Arbor, made some very important remarks some time ago at the meeting of the American Medical Association. He pointed out that the most dangerous germ in the milk is the colon bacillus. It is sometimes very virulent. After a series of careful experiments he showed that heating the milk to 356° F. does not destroy the toxin of the colon germ, though the germ itself may be destroyed. A very small dose of the colon germ toxin may prove fatal. In this way attempts at sterilization may completely fail. He mentioned that the only safety lay in proper care over the milk supply, so as to avoid contamination with the germ.

Rickets and Sterilized Milk.—Ausset (*Jour. Méd. de Bruxelles; Amer. Med.*) considers chronic gastroenteritis a predisposing cause of rickets. Milk is not the direct cause of gastroenteritis, but the abuse of it, whether it be sterilized or come from a wet nurse. Of 682 infants observed, 456 had been nourished from the bottle, and among these, 349 who had been fed on sterilized milk or broths, were rachitic. Sixty-one had been given thoroughly sterilized milk, but at no fixed intervals. Forty-six who had been fed on similar sterilized milk, but with all necessary precautions, presented no sign of rickets. Of 167 infants nourished from the breast, 19 were rachitic; these had been nourished only from the breast, but at no fixed interval. It is therefore the careless manner of administering milk which causes rickets. More cases of rickets are seen with sterilized milk because the rules of hygiene are more easily broken.

Importance of Milk Analysis in Infant Feeding.—Wentworth (*Boston Med. and Surg. Journal*) gives tables exhibiting the variation in the percentage of cream in the upper layers of various milks, showing a difference of almost 100 per cent. The percentage of sugar is higher in the lower milk and of proteids in the cream. He describes the methods of estimation. Unless explicit directions are given as to home modification mistakes will occur. The most harm is done to infants a few weeks old. The results of too little fat are not so serious as too much. When the milk is poor in cream it is impossible to modify so as to obtain a sufficiently low percentage of proteids. When the upper ¼ contains less than 12 per cent. of cream it is better to take off less than that quantity. Analyses of 26 specimens of commercial modified milk showed every one incorrect. The fat percentage was usually too low. In every milk used for modification the percentage of fat should be accurately determined once at least. It is advisable to repeat the test when the cattle's food is changed. Home modifications carefully made are better and much cheaper than the commercial article.

Alcohol as a Beverage.—By stimulating the appetite, says Graham Lusk (*Boston Med. and Surg. Jour.*), alcohol aids in the preliminary "psychic secretion" of gastric juice. A further flow is brought about by chemic reagents acting upon the neurosecretory apparatus. Alcohol causes the gastric glands to secrete even when introduced into the small intestine or rectum. If too much is taken there is too great irritation with decreased activity and dyspepsia. It is doubtful whether in normal persons continued encouragement of the appetite is desirable. The diminution of the sense of fatigue through depression of the inhibitory centers brings cheer to the weak and makes work seem easier, thus increasing ability at first, but afterward decreasing it. Alcohol is not favorable to work of the painstaking kind. It reduces the power for both mental and physical labor.

A Nutritive Lemonade for Febrile and Wasting Diseases.—In the case of a patient confined to liquid diet, milk, beef tea, whey, barley, water and lemonade

comprise about the entire bill of fare. Some of these preparations have little nutritive value while the patient soon grows tired of milk. R. W. Leftwich, in *Merck's Archives*, therefore suggests a white-of-egg lemonade, which is best prepared in the following manner: Two lemons, the whites of two eggs, one pint of boiling water, loaf sugar to taste. The lemons must be peeled twice, the yellow rind being utilized, while the white layer is rejected. Place the sliced lemon and the yellow peel in a quart jug with two lumps of sugar. Pour on them the boiling water and stir occasionally. When cooled to about the ordinary temperature of tea, strain off the lemons. When the lemonade is in full agitation by whipping, add slowly the white of egg and continue the whipping for two or three minutes. While still warm, strain through muslin. Serve when cold. The white of egg imparts a blandness which makes the addition of sugar almost unnecessary, and this absence of sweetness is greatly appreciated by the feverish patients.

This lemonade is a most excellent drink throughout the course of typhoid fever. It would, however, probably be contraindicated in Bright's disease and in gastric ulcer.

GLEANINGS.

The Septic Tank.—At the Pittsburg meeting of the American Association Prof. L. P. Kinnicutt vindicates the old-fashioned cesspool as equivalent to one of the new methods of treating sewage, under the name of septic tank. He says it is most interesting, as well as somewhat amusing, to see how the old-fashioned cesspool, which only a few years ago was regarded as a breeder of all manner of ills, is now regarded by sanitarians as a most valuable adjunct in the disposal of filth.

A septic tank is only an open or closed tank through which the sewage is run continuously, but at so slow a rate that it requires from twelve to twenty-four hours for it to pass through the tank. The sewage itself contains anærobic bacteria, and by allowing the sewage to remain in the tank, out of contact with air, these bacteria increase immensely in number, and acting upon the solid and liquid substances in the tank, bring about those changes which are grouped under the name of putrefaction.

In cider-making, sweet apple juice, charged with micro-organisms derived from the dust on the skin of the apples, or from the atmosphere, or from the sides of the cask, is slowly worked over by these organisms and turned into hard cider, and eventually into vinegar. In a similar way the sewage in a septic tank, charged with anærobic bacteria, is worked over, or fermented, by these bacteria, which in this way remove or completely change a large amount of the polluting substances, and give a product which is no longer crude sewage, but a sewage in which a large amount of the solid matter has been liquified or changed into gas.

Fat Embolism After Fractures.—H. Euphrat (*D. med. Woch.*, July, 1902) adds another to the list of sudden deaths from fat embolism after fractures of the long bones. His patient was a robust man of forty-five, with a fracture of the neck of the femur, who died at the commencement of chloroform narcosis just after he had been placed on the operating table. He suggests that early massage after fractures of the long bones and changes of position are liable to induce fat embolism in the lungs and consequently they should be carefully avoided.

The scarlet fever antitoxin seems to be progressing if we may credit the recent report from McGill University as made by Dr. G. A. Charlton.

Dr. Paul Moser, of Vienna, has been working on similar lines with such good effect that the Austrian Government has decided to grant a considerable sum for providing the hospitals with his remedy, but Dr. Charlton has independently discovered the same methods, that promise to reduce the terrors of scarlet fever as completely as antitoxin has done in the case of diphtheria.

"There is," said Dr. Charlton, in discussing the matter, "a parasite in the system of patients suffering from severe forms of scarlet fever known as the streptococcus. It is not the exciting cause of the disease and is not present in the light cases, but it seems to lead to a secondary infection when once the disease has been contracted, and to be largely responsible for the high fever, the suppuration of the ear and other dangerous symptoms associated with the complaint.

"This organism is combated with a serum prepared under the direction of Dr. Hubbert, of Detroit. Its success may be judged of by the fact that in fifteen cases, most of which would under ordinary treatment have ended fatally, or, at least, in which the patients would have suffered from lingering and troublesome complications, thirteen made prompt recoveries, almost free from the complications. Of the two patients that died, one succumbed five hours after admission to the hospital, and the other was carried off by an attack of diphtheria. The results produced by the serum were the rapid subsidence of the fever, an improved pulse, an absence and a marked amelioration of the suppuration of the ear and other troubles, and a rapid convalescence. With such a remedy, the worst features of the disease seem absolutely suppressed."

It is too early to prognosticate, but appearances seem to indicate that substantial improvement in the treatment of a most dread disease is already in sight, and the method is worthy of general adoption, with careful scrutiny, in order to avoid mistakes. With a really effective antistreptococcus serum this horrible disease would be robbed of half its terrors.

The two prizes of a thousand dollars and five hundred dollars which were offered last January by The Maltine Company for the two best essays on "Preventive Medicine," have been awarded by Dr. Lewis of New York, Dr. Reed of Cincinnati, and Dr. Rhodes of Chicago, who were selected for this purpose.

Two hundred and nine essays were submitted in competition, and although nearly every State in the Union was represented in the contest, both prizes were won by Philadelphia men.

The thousand dollar prize was awarded to Dr. W. Wayne Babcock. His essay is entitled, "The General Principles of Preventive Medicine."

The five hundred dollar prize was awarded to Dr. Lewis S. Somers. His essay is entitled "The Medical Inspection of Schools—a Problem in Preventive Medicine."

The two successful essays will first be published in medical journals, and then in permanent form for gratuitous distribution to the profession at large. The committee congratulates all concerned upon the widespread interest which has been aroused, and believes great good will follow the publication.

MISCELLANY.

—The cooked taste of boiled milk can be prevented by keeping it from contact with the air. Professor Gartner accomplishes this by dropping a small piece of paraffin into the milk, which melts at 70° centigrade, and spreads out in a thin layer on top of the milk, allowing the escape of gases while preventing the ingress of air, and forming an air-tight hard cover over the top as it cooks.

—Cutter calls attention to the fact that as a food—for example, as an army ration—alcohol has gone out of use and is recognized as depressant in common life. He quotes freely from Rosenberry and agrees with him "that alcohol is no tonic, no analeptic, but a narcotic and the freer one keeps oneself from its use, whether healthy or diseased, so much the less one disturbs one's length of life and one's capabilities."

—The Japanese military authorities in Formosa have lately made an interesting experiment by mechanically protecting soldiers from the bites of mosquitoes. A whole battalion of soldiers was protected for 161 days and not a single case of fever was observed. During the same time and at the same place 250 cases of malaria occurred in another battalion not so protected. It would seem that the scientific demonstration of the agency of the mosquito in producing malaria was complete.

—An item is going the rounds of the press to the effect that Karl Mann, the vegetarian pedestrian, has scored a victory over a meat eater in a walking match from Berlin to Dresden. On this a contemporary remarks that, "while even the beef trust is not likely to drive us all into the vegetarian fold, it is plainly to be seen that meat eating is not essential to health or strength, while it is equally true that too rich a nitrogenous diet is productive directly or indirectly of disease or organic weakness."

—A disturbance has recently arisen in the Bellevue Training School for Female Nurses on account of the ruling of the new superintendents which forbids the students to speak to the physicians and male nurses except on matters of business, and to hold no conversation whatever with them outside of the hours of duty. Iron-bound rules of this character are in every respect unwise and unjust, taking as they do for granted a depravity of the female sex which does not exist and is in every way insulting to both parties.

—Female medical students have been admitted to the German universities this year, and 618 have attended the lectures, but only nine have thus far entered as regular students. The women are even favored above the men at present, as certain work at a foreign university is credited to them in the state examinations. In Austria the authorities have decided to admit women also, on the same terms as men in every respect, with the new scholastic year. Among the 850 students at Zurich, 214 are women, and 128 of these are studying medicine.

—Mr. Andrew Carnegie has offered to aid in building a $2,000,000 hospital for workingmen at Pittsburg, but refuses to erect such hospital himself. This he claims would relieve the employer of all responsibility and perhaps in the end result in making him careless of the lives of his employees. The workingmen would also feel dependent, which many of them would resent. Mr. Carnegie favors an institution in which all the capitalists are interested; one to which they can send their workmen and pay for their care. To such an institution he will contribute liberally.

—The bishop of Fano in north Italy provides for the association of cleanliness with godliness in his instructions to pastors; an example which might well be emulated in religious circles generally. In all churches, after feast days on which unusual numbers of people have congregated, the floors are to be cleansed with a sublimate solution 1-1,000. At least once a week pews and confessional benches must be wiped with a damp cloth, and the grating of confessionals washed with lye. The appurtenances of the altar are likewise to be cleansed with lye or sublimate.

—The number of foreign medical students in France has constantly decreased since more stringent regulations were introduced about 1895. There are now 764, while in 1894 there were 1,054. Russia and the southern countries of Europe afford the largest contingent—Turkey, Roumania, Greece and Bulgaria. There are six students inscribed from the United States, sixteen from South America, elevn from the Antilles, and eight from Central America, with three from Mexico. The total number of French medical scholars is 7,118, or 7,882 in all, of whom only 54.8 per cent. are inscribed at Paris.

Millard (*Lancet*, April 5) brings forward opinions and statistics to show that the popular idea as to the infectiousness of the desquamative scales in scarlet fever is erroneous. He quotes the opinion endorsed by the Clinical Society of London, 1892, concerning this matter, and then proceeds to show that there has been a change of opinion among medical health officers of England in regard to this point. If his opinion is corroborated, it means that we shall be able to cut down the isolation of these cases from six weeks to four weeks, as he has repeatedly done, and be able to save the patient and the family a great deal of annoyance.

—The results of numerous microscopic investigations submitted by Mr. Bra to the Academy of Sciences at Paris, go to establish that immediately before or after an epileptic fit, a special kind of micro-organism is always present in the blood. This parasite when magnified five hundred fold can be perceived as a little point, occurring frequently by twos or by more individuals, connected in the form of a chain. The points move rapidly, and the chains sometimes get attached to the end of a red blood corpuscle. Hitherto great uncertainty prevailed concerning the causes of epilepsy, but if the discovery of the French scientist be confirmed, epilepsy would belong to the series of diseases caused by micro-organisms.

—Recent experiments made in the Finsen Institute with various metals instead of carbon electrodes have led (*Med. Record*) to a most surprising discovery, namely, that iron gives a spectrum which is enormously rich in chemical rays but almost devoid of heat rays. Utilizing this peculiarity of the spectrum of iron, a Finsen lamp has been constructed, the electrodes of which are composed of hollow cylindrical pieces of iron, which are cooled by water circulating inside them. The light produced by the new lamp is very intense; within two minutes a bactericidal effect is produced as great as that produced by the old Finsen light within an hour. The test microbes were: Bacillus tuberculosis., b. typhi-abdominalis, b. choleræ Asiaticæ, streptococcus pyogenes aureus, bacterium coli communis, and gonococcus. Figures are given showing the bactericidal power of the new lamp over the apparatus formerly in use.

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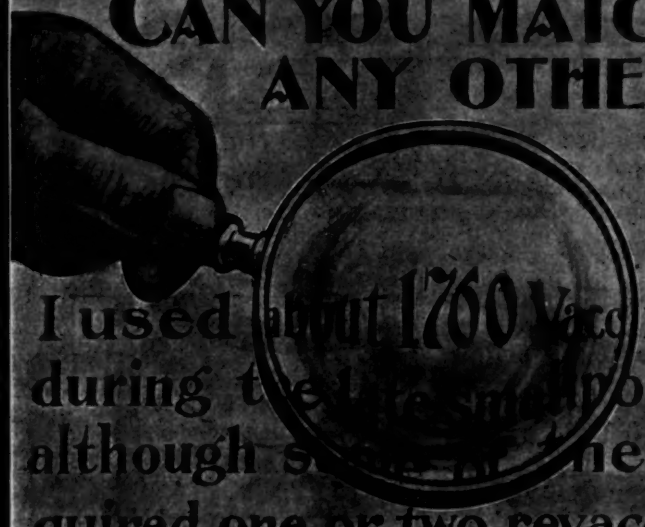

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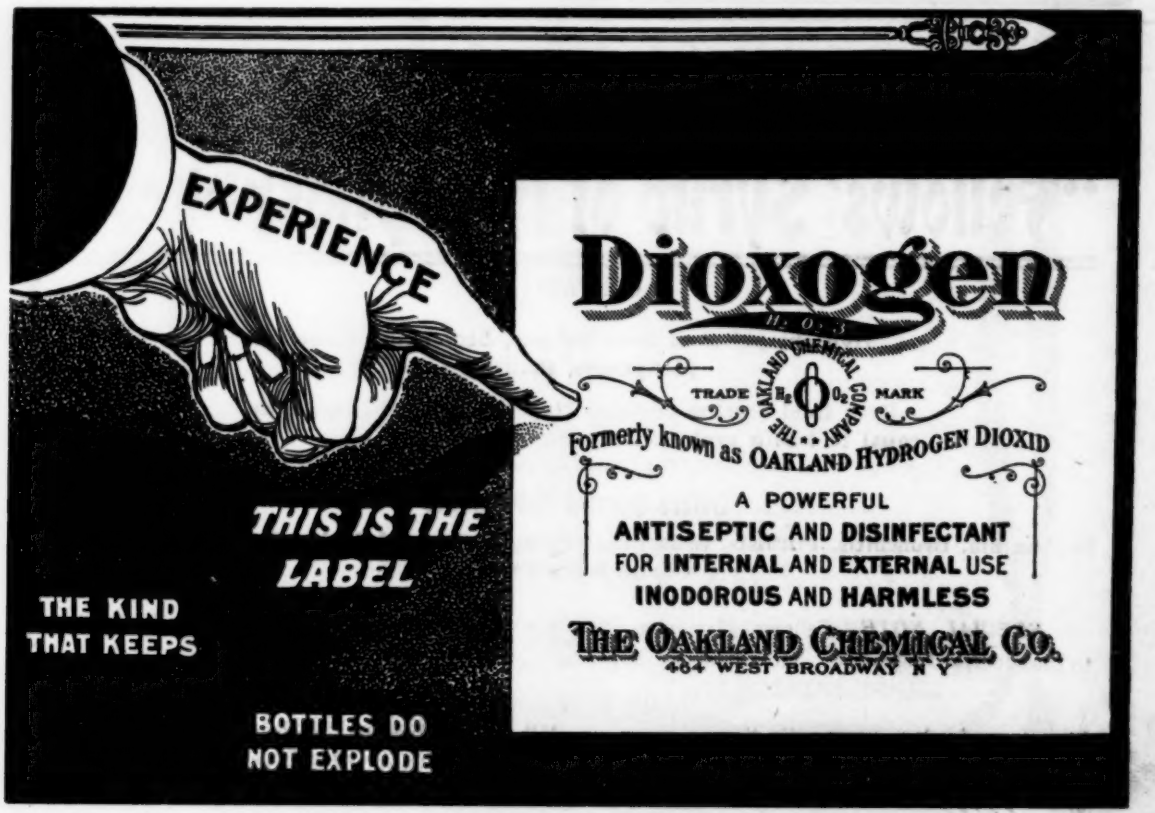

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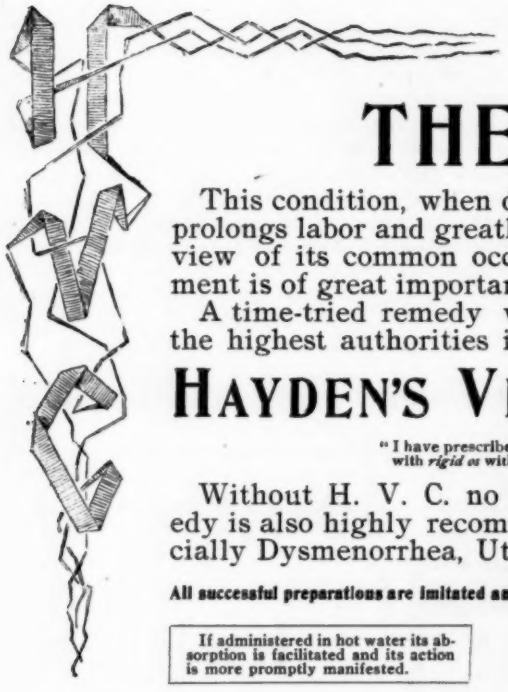

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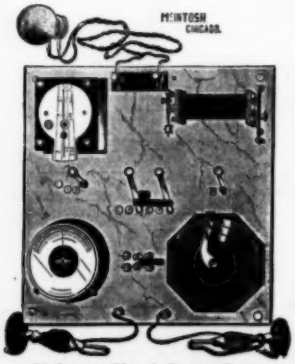

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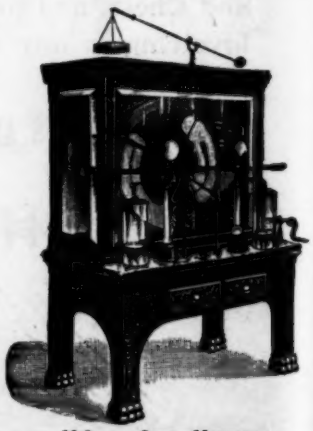
McINTOSH STATIC MACHINE.

SELECTIONS.

At Athens a woman physician has been appointed prison physician. She is the first woman to receive an official post from the Greek Government.

London has 6,500 beds for the treatment of infectious diseases, or one bed for each thousand of population. New York City has only 750 such beds, or one for each five thousand.

International Otological Congress.—This Congress will take place in 1904 instead of 1902 as originally planned. The date of the Congress has been postponned on account of the International Medical Congress to be held at Madrid in April next.

Hospital for Lepers in Russia.—The Russian Society for the Suppression of Leprosy has recently erected a sanatorium for lepers in St. Petersburg, having accommodation for 95 patients. The Society receives an annual allowance from the local government, conditional upon its care for all lepers found in the city hospitals.

When babies refuse other Foods, and greedily take Eskay's, it is a pretty sure indication that it is not only palatable to them, but satisfies the cravings and needs of their systems better than any other form of nourishment. That this is a fact, is shown by the many clinical reports, not only from physicians in private practice, but also institutions, all of which speak in the highest terms of Eskay's. The Burrage Hospital, of Boston, Mass., says that, "Eskay's Food is being prescribed in nearly all of our infantile cases, by different members of the staff, and the results met with are very satisfactory."

Huxley Memorial Unveiled.—A tablet in memory of the late Professor Huxley was unveled October 23, in the public library at Ealing, his birthplace. An address was made by Professor Henslow, who mentioned that among the subscriptions received was one from a U. S. Naval officer in the Philippines and another from a dockyard laborer whom Huxley had once befriended.

The Pan-American Sanitary Congress will meet in Washington on December 2nd. The object of the conference will be to definitely discuss some practicable universal plan for the prevention and suppression of yellow fever and other plagues in Pan-American ports. Surgeon-General Wyman, of the United States Public Health and Marine Hospital Service, was a prime mover in the inauguration of the congress and will take part in its proceedings as a delegate from the United States.

Six short years ago the X-ray apparatus was universally regarded with suspicion. To-day nearly every up-to-date physician has a Kinrade Coil, which he instantly attaches to an ordinary incandescent light socket and conducts a thorough X-ray examination of treatment, neatly, quickly and almost without expense.

The famous Kinrade is the sole product of Swett & Lewis, Boston, Mass., who first started business in '97 with two men in a 10x12 foot floor space. The tremendous demand for their product has continued to increase with such rapidity that they have found it necessary to double, and even treble their capacity many times.

Their business now requires more than an acre of floor space, and a very large force of skilled workmen.

Continued on page XVII.

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FORMULA	Sodium Sulphite,	1 gr.
	Salicylic Acid,	1 gr.
	Pv. Capsicum,	1-10 gr.
	Pepsin Conc't,	1 gr.
	Ext. Nuc. Vom.	⅓ gr.

Very efficacious in Dyspepsia and Intestinal Indigestion, and especially valuable in cases of mal-assimilation of food.

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FORMULA	Mass. Chalybeate	2½ gr.
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Royal Baking Powder vesiculates the dough by mechanical means, without fermentation, and in no way affects or changes the constituents of the flour. There is no destruction of the gluten or sugar, but all those elements are preserved which are intended by nature, when combined in our bread, to make it literally "the staff of life."

Fresh bread, cake, biscuit, griddle-cakes, etc., raised with Royal Baking Powder, may be eaten with impunity by persons of dyspeptic tendencies or the most sensitive stomachs.

Food for the sick requiring to be leavened is made perfectly wholesome and more nutritious by the Royal Baking Powder than by any other vesiculating agent.

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SELECTIONS.

Ninth International Congress Against Alcoholism. —This congress will be held in Bremen, April 14 to 19, 1903.

Yellow fever is reported to be epidemic in Orizaba, a city on the line of the Mexican railroad, between Vera Cruz and Mexico City.

After the removal of alcohol, Celerina, given in doses of from one-half to one ounce every four hours, is speedily followed by the most characteristic symptoms of improvement.

The "Sanitas" Company has introduced the "Formic" air-purifier, which is simple, effective and withal cheap. Write for literature to 636 W. Fifty-fifth street, New York.

Dyspepsia and mal-assimilation are two factors, which are bridges which must be crossed before we can get good results in any case. To cure Dyspepsia some one remedy is best, provided that one remedy acts on all kinds of food. A one-sided digestive ferment will not produce the result we desire, and so a reliable one remedy must be found. As before said, Peptenzyme has been found easy, both for infants and adults. The remedy can be given with great freedom as regards dosage, as it is entirely non-toxic.—*Medical Progress.*

Physician's Pocket Account Book consists of a book of 208 pages, 4½ by 7¾ inches, bound in heavy manilla, with cloth back, and, for convenience of carrying, it is enclosed in an elegant, substantial leather case. The price of the set, consisting of the book and case, postage paid, is $1.00. Subsequent books alone, 40 cents each, or three for $1.00. Under ordinary circumstances one case will last until three or four books are filled. Some persons will wear it out with the first one, as they would an ordinary leather-bound book. Even in that case the book is far more economical than any other system that can be procured. Literature furnished upon application.—Published by *The Medical Council,* Twelfth and Walnut streets, Philadelphia.

American Public Health Association, New Orleans, Dec. 8-13, 1902. —The Southern Railway announces for the meeting of the above Association a rate of One and One-Third Fare for the Round Trip. Tickets on the certificate plan will be on sale December 4th to 10th. The Southern Railway operates from New York three trains daily, carrying Pullman Sleeping and Dining Cars on all trains. From New York to New Orleans, 39 hours. The "Municipal Journal and Engineer," of New York, has arranged for special Drawing Room, Compartment Sleeping Cars to leave New York Saturday, December 6th, at 4.25 p. m., arriving at New Orleans, Monday morning, December 8th, at 7.25 a. m. This train composed exclusively of Pullman Sleeping, Dining, Club, and Library Observation Cars. For further information regarding rates, Sleeping Car accommodations, call or address: Alex. S. Thweatt, Eastern Agent, 1185 Broadway, New York; W. A. Johnson, Passenger Agent, 271 Broadway, New York; Geo. C. Daniels, New England Passenger Agent, 228 Washington street, Boston, Mass.; C. L. Hopkins, District Passenger Agent, 828 Chestnut street, Philadelphia; S. E. Burgess, Traveling Passenger Agent, 120 East Baltimore street, Baltimore; L. S. Brown, General Agent, 705 Fifteenth street, N. W., Washington.

There was recently organized at Burlington, Vermont, by a number of physicians and laymen, an association under the name of the Vermont Society for the Study and Prevention of Tuberculosis.

Illegal Practice of Medicine. —The Rev. W. N. Ritchie, a Presbyterian clergyman, was recently found guilty of practising medicine illegally, and was fined $75 in Special Sessions. He was secretary of a company formed to exploit an alleged cure of the morphine and other drug habits, which he owned. The prosecution was on the complaint of the Medical Society of the County of New York.

Mortality From Phthisis in Europe. —The following statistics have been published by the Imperial Health Office, Berlin. Russia has more than 4,000 deaths per 1,000,000; Austria-Hungary and France more than 3,000 per 1,000,000 population; Sweden, Germany, Switzerland and Ireland, more than 2,000 per 1,000,000 population; Netherlands, Italy, Belgium, Norway, Scotland and England more than 1,000 deaths per 1,000,000 population.

An old deacon was told he would have to take brandy or he would go into fits. He replied he would try a few fits. I feel a good deal that way in regard to Epsom Salts, whose taste to me is the vilest of any medication that ever passed my lips, although I am aware that many people do not mind it, but those who do, will find that in Abbott's Saline Laxative the unpleasant taste is almost entirely taken away, without impairing in the least the efficacy of this matchless Saline. Taken in a full glass of cold water before breakfast, it acts at once, within two hours, and no more—just enough and no more, while other salines keep you worrying all day long. But any one who is indisposed to pay the fraction of a cent for these advantages, had better stick to the crude salts.

Valentine's Meat-Juice. —This well-known dietetic preparation is being constantly resorted to by many prominent practitioners connected with the largest institutions of this country and Europe, where a palatable form of food, in small bulk, easily assimilated, is required. With delicate Infants in their earliest days and where other food is rejected, it will be found a safe, reliable and powerful remedy for the sick and convalescent. T. G. Comstock, Professor Obstetrics, Homeopathic Medical College of Missouri, St. Louis, states "For some years Valentine's Meat-Juice has been employed in the Good Samaritan Hospital, St. Louis, and is approved of by the Medical Staff. I have always found it reliable and most excellent. Dr. Chas. Mohr, Professor of Materia Medica, Hahnemann Medical College, Philadelphia, Pa., says "It demonstrates its restorative and nutritive value in Post-Partum Hemorrhage and Anæmia, in long, painful and exhausting labor, and I place much confidence in it, treating nursing mothers who are weak from excessive lactation. Dr. Wallace McGeorge, ex-President New Jersey Homeopathic Medical Society, states "I use Valentine's Meat-Juice in convalescents and in children who are threatened with Marasmus and are troubled with mal-assimilation, and I strongly recommend it."

In making up your list of Journals for the coming year, do not forget *Everybody's Magazine*, published by John Wanamaker, New York. It is interesting, deals with human experience, is thrilling without being sensational, and withal costs only one dollar a year.

Continued from page XV.

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Consumptives will gain weight on Hydroleine where they lose weight on plain cod-liver oil. The plain oil will cause diarrhœa, oily eructations, or pass through unchanged; while Hydroleine will be eagerly taken up by the lacteals, and produce a steady gain in weight, and a marked improvement in the general health. Hydroleine aids and restores the functional activity of the pancreas and rapidly develops an appetite.

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Samples Sent to Physicians on Request.

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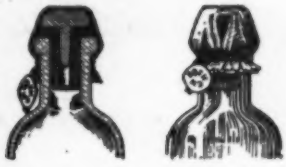

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Safely and swiftly ELIMINATES the inherent cause in all forms of Neuralgia, Myalgia, Sciatica, Acute Rheumatism, Typhoid Fever, La Grippe, Asthma, etc.

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LIQUOR FERRISENIC—Each dram contains: Proto-Chlor. Iron, 1-8 grain; Bi-Chlor. Mercury, 1-128 grain; Chloride Arsenic, 1-280 grain; Calisaya Cordial. Dose, 1 to 2 drams. 12-oz. bottle, $1.00.

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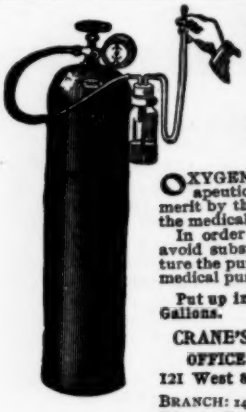

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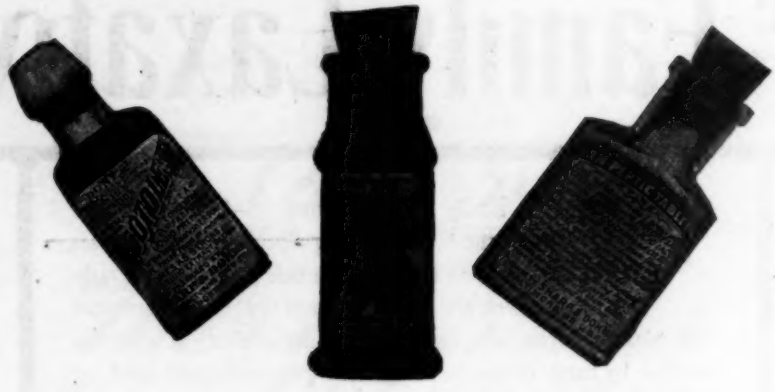

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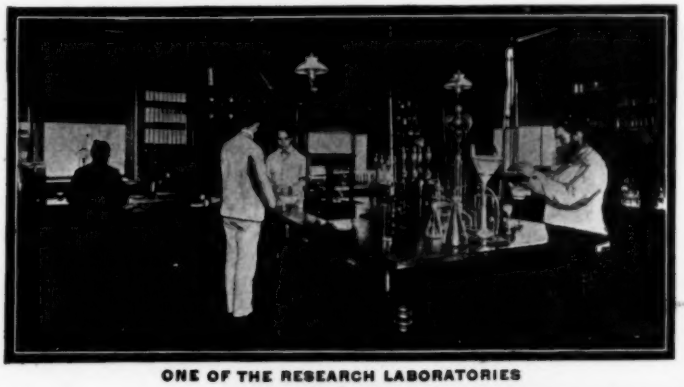

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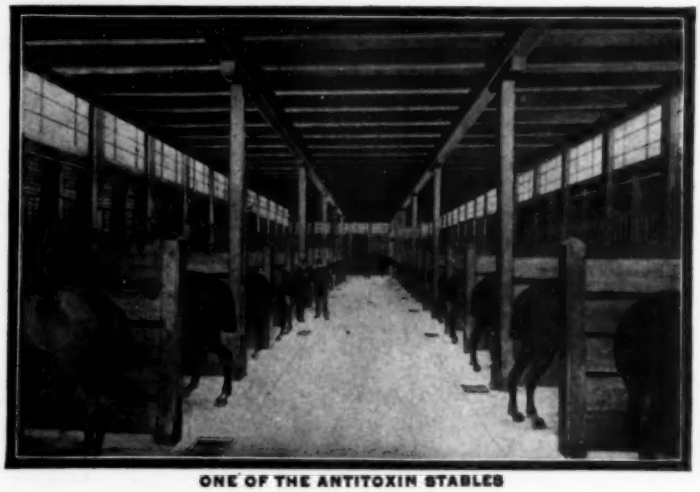

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Mulford's Antitoxin **is prepared in accordance with the most rigid requirements of science: surgical, germ-free cleanliness characterizes every step of its production, the exact unit-strength of toxins and antitoxins is determined with absolute mathematic precision, the harmlessness of each separate yield of antitoxin is determined by repeated series of tests upon guinea-pigs, the antitoxin never comes in momentary contact with the atmosphere.**

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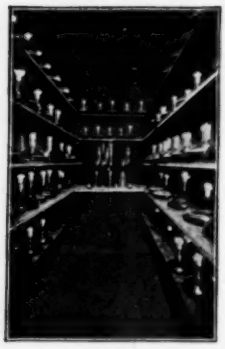

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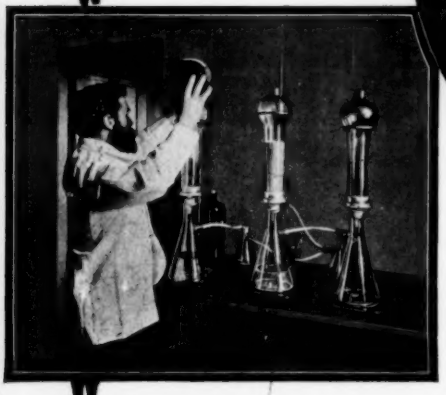
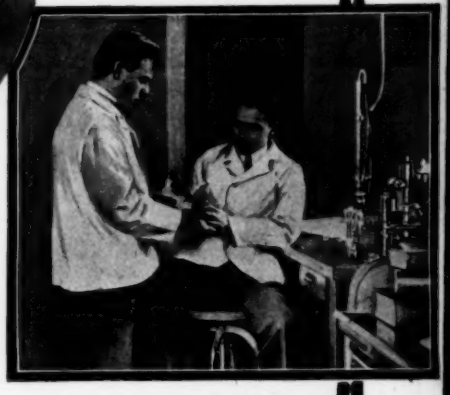


FILTERING ANTITOXIN



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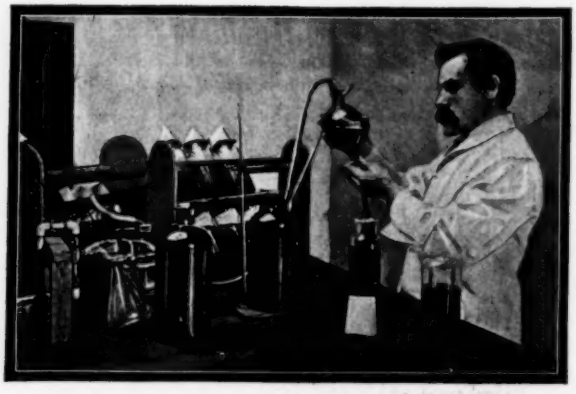
Each cubic centimeter of Mulford's Antitoxin always contains a definite number of antitoxic units. This is the exclusive feature of Mulford's Antitoxin—no other serum in the world is so standardized or so scrupulously prepared.



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THE VACCINE LABORATORIES are entirely separate and remote from the Antitoxin Laboratories; they were constructed after careful inspection of the leading government vaccine establishments of Europe. The buildings embody all the latest features of sanitary construction with the details observed in modern hospitals and hygienic laboratories; no other vaccine plant is so extensive and complete.

The inoculation of animals and collection of virus are performed in a strictly aseptic manner in an operating room located in a separate building remote from the stables.

ONE OF THE VACCINE STABLES

THE STABLES accommodate one hundred calves, each of which is confined in an individual compartment. The floors, walls and ceilings are of cement, slate and porcelain finish and are frequently and thoroughly flushed and disinfected. The stables are heated and ventilated by the direct-indirect systems. The calves are fed exclusively upon milk and the excretions are disinfected and removed as soon as voided. Each separate building is a hygienic model, and the principles of asepsis are as rigidly adhered to as they are in the operating room of any modern hospital. Every calf is kept constantly immunized against tetanus by the injection of tetanus antitoxin, and is also injected with tuberculin in order to assure its freedom from disease; furthermore, each animal is subjected to a thorough physical examination by our veterinarian, who is in constant attendance.

MILK IS USED EXCLUSIVELY IN FEEDING CALVES

ANIMAL TESTS After the collection of vaccine each animal is killed and subjected to a careful post-mortem examination. ***The virus from absolutely healthy animals is used exclusively.*** Furthermore, tests are made on guinea-pigs in doses one hundred times as great as would be used for vaccinating a child. These procedures preclude absolutely the contamination of ***Mulford's Vaccine*** with toxic germ-products.

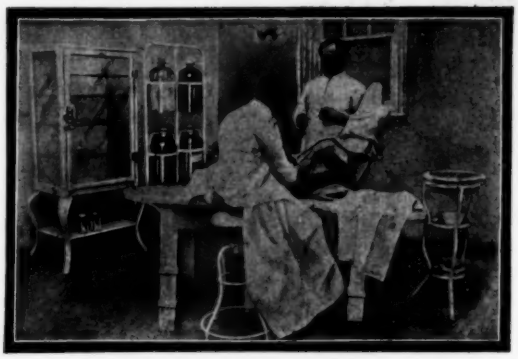
H. K. MULFORD COMPANY, PHILADELPHIA, NEW YORK, CHICAGO

(C)

HOW MULFORD'S VACCINE IS MADE

THE OPERATING ROOM

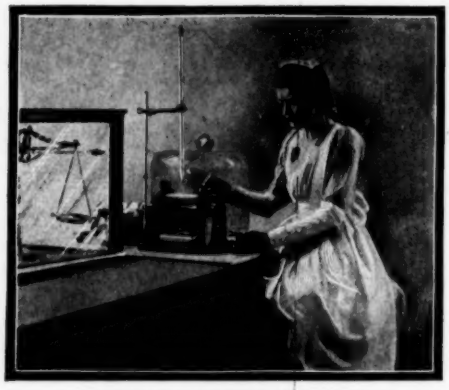
in which the inoculation of animals and collection of virus are executed, is maintained so rigidly aseptic that in it abdominal operations upon the human being could be safely performed. Everything connected with the collection of virus—instruments, apparatus, towels, etc.,—are sterilized by the most approved methods. The entire room is daily flushed with antiseptic solutions and disinfected with formaldehyde.



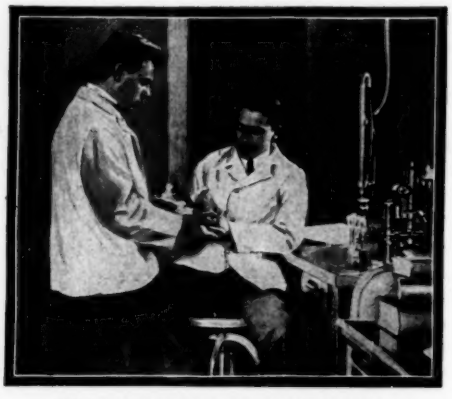
THE COLLECTION OF VIRUS

COLLECTION OF VIRUS

After the vaccine is collected it is ground between glass rollers upon which Glycerin (C. P.) is gradually dropped from a graduated pipette. This assures thorough trituration. Every drop of ***Mulford's Glycerinized Vaccine*** is of uniform potency and activity. After trituration, the glycerinized virus is stored and subjected to repeated bacteriologic and physiologic tests.



GLYCERINIZATION OF VACCINE



TESTING VACCINE ON GUINEA-PIGS

FILLING TUBES

The capillary tubes are filled, by means of a vacuum apparatus, with bacteriologically and physiologically tested vaccine and hermetically closed, so that outside contamination is impossible. Each individual tube is, therefore, of guaranteed purity and activity.

FILLING TUBES WITH GLYCERINIZED VACCINE

We guarantee successful results in all primary vaccinations.

Mulford's Vaccine is furnished in three forms:

GLYCERINIZED LYMPH, In Capillary Tubes (10 vaccinations)	**$1.00**
GLYCERINIZED POINTS (per case of 10)	**1.00**
GLASS ASEPTIC POINTS (per case of 10)	**1.00**

Supplied by representative druggists in every American city or mailed, postpaid, upon receipt of price. Complete literature upon request.

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From the Fruit of Carica Papaya,

is highly esteemed as a digestive aid; unlike Pepsin or Pancreatin, it will dissolve albumen and fibrine in **neutral** and **alkaline** media, and hence is active in **both stomach** and **intestines.** Dose, 3 to 5 grs. **Papain, L. & F.,** has yielded excellent results as a **diphtheritic membrane solvent** in 5 per cent. solution.

Pamphlets on Papain, the Vegetable Pepsin, Its Origin, Properties and Use" also Samples, mailed free on request, by

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MANUFACTURERS, NEW YORK.

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An Aphrodisiac without untoward by-effects

Of particular efficacy in

Impotency of neurasthenic origin.

Daily dose beginning with three Yohimbin Tablets containing 5 milligrammes (0,005 g.) Yohimbin hydrochlorate. See Bartholow: "Yohimbin and Its Salts; a New Aphrodisiac." *Med. News*, March 2.

LITERATURE ON REQUEST

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The success of the present-day treatment of nervous exhaustion, malnutrition and general debility is largely due to

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It has become the Standard Remedy.

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"I have tested Eskay's Food in Acute Dysentery, Typhoid Fever, Stomach Troubles and other conditions where the patient required some special feeding. It has been so satisfactory to me that I do not hesitate to recommend it in similar cases."
(Name of Doctor omitted for ethical reasons.)

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This cut shows leg for amputation six inches below the knee, with inside socket thrown out of its proper position in order to show its construction.

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